Congregating Public Facility Investment for Sustainable Community: The School-Centered Community Approach

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Congregating Public Facility Investment for Sustainable Community: The School-Centered Community Approach

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SUMMARY

Land development patterns have long been a reflection of not only consumer preferences but of public policy. Public policy initiatives including zoning laws, the Federal Housing Administration, Fannie Mae, and the Federal Highway Act all had at least a supportive role in scattered, low-density and automobile-dependent development patterns (Weiss, 1987). It is not only the private sector realm of builders and developers who have created sprawl. Government agencies have also contributed to the problem in the ways they invest in public infrastructure devoid of a coordinated strategy. Schools, public recreational facilities, and branch libraries often are isolated from one another. New school construction often occurs on the fringes of the population and lacks integration within the communities they serve, particularly in growing suburban areas (Smith, 2009).

Previous research has quantified the causal relationship between school construction and residential development (Wagner, 2009). The focus of this thesis is to demonstrate that the public schools' ability to drive residential growth can be leveraged to produce a more sustainable development solution, driving residential, commercial and cultural growth through master planning, co-location strategies, and the use of joint-use facility agreements. My hypothesis is that congregated public facility investment, in the form of planning area creation for school construction, recreational amenities, public libraries and other public assets, can serve as an early impetus for private sustainable development strategies.

This research shows, through the use of case study examples, that such public policy strategy has proven successful in metropolitan suburban communities as well as in the disadvantaged urban core. The by-product of such a coordinated public investment strategy can include taxpayer savings through the reduction of redundant facilities, improved community integration of these assets, and an ability to influence the development pattern of the private sector toward more compact, mixed-use development.

CHAPTER 1: INTRODUCTION

1.1 Study Overview

This thesis demonstrates that the precursor to changing unsustainable private land development patterns can be the proper alignment of public investment that "sets the table" for a sustainable private sector response. In order to support growing populations, school construction dollars, recreational facility funds, and other public investments are made. The unique ability of the school to deliver community arts, music, and social services, in addition to its function as a physical location of traditional educational pursuits, is explored. It is these broader applications of the institution itself that would enable this public investment to weave into the community fabric and make the transition from merely communities of geography to creating and strengthening communities of interest (Fulton, 2003). This occurs when diverse activities are placed in close proximity to one another. Planning strategies such as facility co-location and joint-use have been employed to enable these public investments to serve as critical elements in building sustainable and more livable communities.

This paper will demonstrate the manner in which public facility investment has exacerbated the problem of the sprawling development pattern and how it can contribute to the solution. A small improvement in the allocation of public resources could yield exponential gains in economic development (Bingler, 1999). The congregated public facility investment approach can provide the framework to demonstrate how school, park, library and other community facility investment can be properly aligned to leverage each other and create the critical mass needed for a truly sustainable community. The justification of this concept is demonstrated through case studies.

Sustainable development is that which establishes a land delivery system that satisfies three fundamental elements; social, environmental, and economic (Dyllick, T. and Hockerts, K., 2001). Smart growth initiatives are the current response toward greater sustainability but face a unique set of challenges when pitted competitively against conventional, sprawling development. Background on these initiatives will be examined. Critical analysis is offered to shed light on the success and shortcomings of providing "community" through these initiatives along with the economic and financing challenges.

1.2 Methodology

The research strategy employed in this paper relies to a large extent on qualitative research. To analyze the effect of congregated public investment strategies and their influence on the subsequent private sector investment, two case studies were selected: one in the urban context and the other in the suburban context. In contrast to these examples, the condition of scattered public assets is illustrated by using Cherokee County, Georgia as a case study. This county was selected because it is typical of many suburban growth counties in that the development pattern is predominately lower density in the cul-de-sac type development pattern. Due to its population growth, new high schools, libraries and public parks have been constructed. The most recently completed high school and middle school complex is used to illustrate how large complexes constructed on the fringe lack the ability to connect to the immediate community. Through the use of this county's future land use map, alternative sites are proposed to demonstrate where these facilities could have been located to accomplish broader community goals.

Focusing on one suburban county allowed for discovery of many of the points of view among intergovernmental agencies and allowed for the congregated and joint-use facility concept to be examined in context. Personal, semi-structured interviews were conducted with members of the county planning department, school system, regional library system, and parks and recreation department. The focus of these interviews was to discover attitudes toward the concepts of co-located and joint-use facilities. While this paper used only one county as an example, based on the literature reviewed in preparation of this paper, similar conflicts in policy are evident across the country (Bingler, 1999).

In order to gain a practical understanding among the professional land development community in the metropolitan Atlanta area, in addition to interviews, a survey questionnaire was utilized to gather data on certain attitudes relating to land development patterns in metropolitan Atlanta and the viability of compact, mixed-use development projects. My aim was to select area developers that built conventional projects and new urbanist-type communities. The list of development professionals was generated by personal contacts that I have made as a land development practitioner for

the past decade, referrals from other colleagues, and from research that identified the entities that developed many of the known compact, mixed-use projects in the area. Of the thirty developers selected to participate, I received sixteen responses. Of these sixteen, eleven of the respondents indicated that they had participated in compact, mixed-use development projects.

1.3 Document Organization

The remainder of this document is organized into the following chapters:

Chapter 2: Literature Review. This chapter contains a summary of the literature regarding schools and their influences on their communities and their effect on the pattern of land development; the concept of congregated public investment with two case studies demonstrating this strategy's effect on the subsequent private sector response; the topic of sustainability is explored as it relates to the necessity to balance social, environmental and economic considerations in community building; and finally, a look at the current response to sprawling development patterns and their limitations as sustainable development strategies.

Chapter 3: Cherokee County, Georgia Case Study. This chapter uses the Atlanta metropolitan county of Cherokee to critique the location selection of this county's most recently completed public high school. Interviews where conducted with key officials in the areas of school, park and library facility planning in an effort to understand their site selection criteria. The county's Comprehensive Land Use Map is used to juxtapose the locations of these facilities against the planned areas for growth.

Chapter 4: Conclusions and Recommendations. The final chapter summarizes the findings and offers specific policy recommendations to encourage the leveraging of public facility investment dollars through the school-centered community concept, co-location strategies and joint-use agreements in order to provide a vibrant community nucleus around which sustainable private sector development could occur.

The appendix to this thesis offers further reading on: the influences public policy has had on the pattern of land development in the United States from the 1920s to 1950s; the findings of the Atlanta land development professionals with respect to barriers unique to the development of compact, mixed-use development projects; an example of a Schools Element in the Comprehensive Plan for Durham, North Carolina; survey data and summaries from key interviews.

CHAPTER 2: LITERATURE REVIEW

2.1 School-Centered Community

Evidence of sprawl is manifest in more than low-density housing and one-story strip retail centers. Public schools, new park and recreation facilities and even the library systems are being constructed using a model that follows this same pattern, which is to say that these facilities are being located outside of targeted higher density nodes and dispersed from one another (Passmore, 2002; Kemper, 1998). Planners and school districts are inadvertently contributing to traffic problems and sprawl by choosing to locate new schools on increasingly large, isolated tracts of land. Accessibility is a function of two functions; size and location. A paper prepared for the South Carolina Coastal Conservation League analyzed school facilities built in different eras. This study demonstrated that schools built after 1983 were not only far less 'walkable' for their students than those built prior to 1983, but also were 41 percent larger (Kouri, 1999). The study cites that this phenomenon is only partly a function of policy requirements. School facilities built since 1983 were done so on sites 60% larger than the state (minimum) requirements. The more walkable schools – those built prior to 1983 – are 21% smaller than current states requirements. The reasons for growing schools sites include an attempt to address the problem of overcrowding and long lead-times in bringing a new facility on-line (Bingler, 1999). Additionally, design criteria that include the desire for these facilities to have ample parking, multiple recreational fields and single-story structures have driven larger school sites (Kouri, 1999).

While criticism has been made of school facilities that are not wholly enveloped by purely residential uses (Smith 2009), an alternative policy is evident in Gwinnett County, Georgia. The Gwinnett school officials look for premium land in commercial, or potentially commercial locations (Kempner, 1998). With an eye toward resale or reuse of the facility, good vehicular accessibility and visibility were cited as premium considerations.

Whether in residential or mixed-use areas, the form of the planning area surrounding the school construction and other public investment can serve as an early impetus for private, sustainable development strategies. Such sustainable development strategies would provide for the increase in opportunities for meaningful social interaction, sensitivity to long-term environmental impacts, and economic justification. The topics explored in this section include: (1) why schools, as opposed to other buildings or facilities assume the critical role in serving as the impetus to development, and (2) how schools drive this growth and what evidence exists to confirm a relationship between school construction and development.

2.2 The School as Community Anchor

The concept of school-centered community is not new, particularly in the rural context. Rural areas consist of low population density and geographic isolation. As such, schools have traditionally played a central role in the life of these communities. In addition to providing basic education, they also serve as a cultural center. Arts, music, athletics and other social activities play out in these centers (Miller, 1995). Social service activities such as health screening, day care, and dental treatment are conducted in such facilities as well. In such rural areas, resources are extremely limited. That being the case, taxpayer money is used to support full-time use of public facilities as much as practical. For many neighborhoods, schools are the most significant public investment that will be made (Chung, 2005). They serve not only as learning centers but also as critical elements in building livable communities. As a way to foster community goals, services that are currently provided independently by cities, counties and schools districts could be consolidated with neighborhood schools (Szalay, 1999). From a social perspective, schools connect neighbors with one another and influence the character of a community (Chung, 2005). As well, new schools can and do attract families to a neighborhood. According to Sheryl Theo (2000), school quality is the most important factor influencing decisions about where to live. This is true among families with

children as well as families without. Real estate's ability to maintain or increase in value is partly predicated on school quality (Theo, 2000).

In order to be a community anchor, a school must provide a range of diverse services that are accessible to the community. Opportunities for such services can include parks, libraries, health clinics and cultural arts. The Edison Elementary School, located in the city of Glendale, California provides such an example.[1] The city and the school district collaborated on a joint development project in 2003 to produce a community facility that provided a new elementary school, community center, library and park expansion for the residents in Glendale. The shared-use facilities include a library combining the functions of a city branch and school facility, multi-purpose gymnasium, recreational fields, and parking facilities. These facilities are reported to open seven days a week with hours of operation extending to 10 pm. However, the more traditional case is that the school auditorium, sports facilities, library and computer labs are available for use by the general public only on a limited basis, thereby creating the need to duplicate many of these same facilities by other government agencies (Bingler, 1999). The most recent manifestation of the school-centered concept is in the context of urban revitalization. The state of California has been on the forefront of providing for progressive alternatives for leveraging public investments to revitalize disadvantaged neighborhoods.

Heavily involved in the movement is the California civic organization, New Schools, Better Neighborhoods (NSBN). This organization's mission is to facilitate the development of small, neighborhood-centered schools that (1) function as community centers, providing services such as libraries, day care, recreation, and health clinics, and (2) reduce sprawl development by using inner city and suburban land more efficiently (Simril, 2002). The nature of limited resources in urban areas is understood, and this initiative articulates strategies to leverage these investment opportunities. The Los Angeles Community Redevelopment Agency (CRA) has created a new redevelopment model with new schools at its fulcrum. As described in their 2002 New Strategy report, this agency believes that, with new schools as the anchor, the city of Los Angeles can reduce the risk for private sector investment in blighted neighborhoods.

[1] Case Study: Joint Use. New Schools, Better Neighborhoods 2003. www.nsbn.org/case/jointuse/edison.

"We need to be thinking long-term. There is no short-term solution to the long-term condition of more and more young people needing to be educated . . . so I say to all decision makers - members of school boards, state legislatures, Governors, and the majority in Congress - we need to think long-term, we need to think permanent, and we need to get on with the business of building schools that can truly be centers of community and centers of learning."

- *Richard Riley, U.S. Secretary of Education*
- *As printed in the Metropolitan Forum Report*
- *By Stephen Bingler, September 1999*

To the extent public investment can serve to bring services and community amenities, as they do in both the urban and rural contexts, a similar application can serve to direct more sustainable private sector development in the suburban context.

2.3 School as Impetus for Growth

A 1996 survey conducted by USA Today found a 10% difference between sales prices of houses in highly rated school districts to those in adjacent districts. As families compete for housing in neighborhoods with better schools, house prices trend up thereby boosting property values. Karl Case, an economics professor at Wellesley College, co-authored a 1998 paper that studied enrollment shifts in Massachusetts's public schools. From 1990-1995, enrollment in schools where test scores ranked in the top 5% rose 22% compared to a rise of 5.3% in the lowest 5% of test score ranking. In another study, two middle-class Boston suburbs were examined. One neighborhood, Brookline, invested in school construction and renovation, and another, Arlington, did not. Brookline began renovating schools in the early 1990s. By the late 1990s, median home prices rose from $275,000 to $520,000. This article did not provide specific data on the price increase in Arlington over this time frame beyond stating that the increase in Brookline was "far more" than that in Arlington. It was also noted that Brookline had a 64% higher rate of students eligible for free or reduced lunches and double the minority population. Ostensibly having witness the growth that resulted from facility improvement in

Brookline, in 1998 Arlington committed to building one new school. Median home prices for single-family homes rose over 7% in less than two years within the attendance boundaries of that school (Finucan, 2000). Another example of land appreciation resulting from school facility investment cited in this article came in the urban context. In Oklahoma City, an elementary school renovation in the 1990s led to a 30-100% increase in property values in the surrounding, mostly middle-class neighborhood. In this instance, the property values rose not due to educational quality enhancement, but simply from the investment in the asset. Finally, a testament to the value the private sector places on schools is exemplified by the $9 million investment the Del Webb company made for an elementary school in its 5,800-acre master-planned community, Anthem, Arizona. The company also donated a 50-acre site for a high school and sites for two additional elementary schools.

It has further been chronicled that schools serve as an impetus to residential development in Georgia. In his 2009 thesis, Impact of the Location of New Schools on Transportation Infrastructure and Finance, James Wagner quantified the relationship between school construction and new development. Pre-construction growth rates were compared to post-construction growth rates in four school districts. One district was studied from each of the areas exhibiting the following characteristics; urban, suburban, exurban and rural. Through travel-time profiles, growth rate comparisons within versus beyond the attendance boundary and spatial analysis, this study confirmed school construction's impact on new residential development. It should be noted that the development response to the new school was predicated not on the quality of the school, but by the fact of just its newness. Despite these synergies between schools and neighborhoods, school boards and community development appear to work at cross-purposes. Residents are not often engaged in a school district's capital planning process, and school planners are seldom actively engaged in community development initiatives (Chung, 2005).

The school-centered community approach would allow for the public sector to take the initiative in realizing its own growth and density objectives in a given locale while allowing schools to resume their historic role as central points in communities – geographically and socially (Miller, 1995). Importantly, it affords the school system,

library, and parks and recreation entities the opportunity to be proactive, rather than reactive, to growth.

The development of a new school alone cannot provide the catalyst for sustainable communities. The suburban landscape is littered with disparate locations of schools, parks, libraries and recreational facilities. Separately, they serve as point destinations and largely accessible only by driving to each one. In such form, their ability to leverage one another or perpetuate a sense of community is virtually non-existent (Smith, 2009). While the construction of new schools has demonstrated the ability to attract residential growth (Wagner, 2009), it does little to make a contribution to creating a social nucleus for the community when it is set isolated from its community in a campus setting and does not open its facilities to the citizens of the neighborhood.

Accomplishing a more community-centric facility entails the creation of a comprehensive planning area that provides for social infrastructure that may then serve as the nucleus from which housing and commercial pursuits may follow. Elements of social infrastructure can include library facilities, a facility for the arts community, park space and recreation fields and other public assets that are interrelated and holistic. This kind of congregation of public investment can create a community identity and thereby provide an impetus for further private investment across the spectrum of development sectors. Residential and commercial building can happen as prescribed by the planning area, over time, organically, and as demand dictates.

2.4 Congregating Public and Private Investment

In 2006 the Urban Land Institute, together with the National Multi-Housing Council, held a series of four forums on compact development in four different locations: Washington D.C., Los Angeles, Fort Lauderdale and Atlanta. The main arguments in this report entitled, "*Compact Development: Changing the Rules to Make it Happen*", include the assertions that compact development offers opportunities to maximize public infrastructure and that compact development makes fiscal sense and helps achieve other public goals. The public investment in this report refers to taxpayer funding for

transportation improvements. The report advocates increasing portions be used for public transit, and the examples cited are predominately urban locations. The 22-mile Beltline project in Atlanta is put forth as a partial solution for absorbing future population growth in Atlanta in a more sustainable and less auto-dependent manner. The economics behind a successful mass transit system suggest that a greater density of human population allows for a critical mass of riders. Therefore, a compact development would serve to enable transportation options. The beltline planning design in its current form calls for the use of high-density nodes that would allow for building heights of up to 12 stories. The 'anchor' around which this urban development pattern would coalesce is the transit station. The Beltline, depicted in Figure 1, is the impetus for planning area creation. The public/private sector investment is the infrastructure itself, coupled with the planning areas surrounding the proposed transit stations. The planning area allows for clarity of vision to be conveyed to the private sector. In the suburban environment, however, there is no investment opportunity of rail and its transit stop to 'set the table' for sustainable higher density, compact development.

Source: Gravel, R. (1999) Beltline Atlanta: Design of Infrastructure as a Reflection of Public Policy.

Figure 1. Atlanta Beltline Proposed Stations.

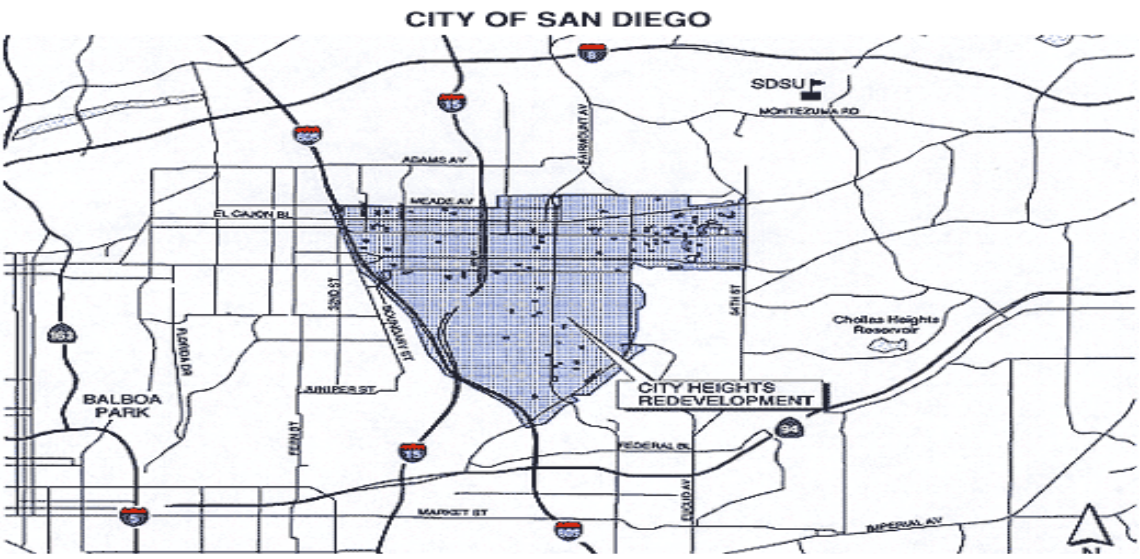
The Cherokee County case study in Chapter 3 will illustrate where such 'density nodes' are established in the suburban context and the manner by which public sector investment, through targeted investment in these nodes, can perpetuate such mixed-use, compact development patterns.

Following are two case studies that exemplify the sort of public planning and investment that caused not only dramatic change to the targeted area, but the cause and effect relationship of this public investment that preceded the private sector response.

2.4.1 City Heights Neighborhood, San Diego, California

The congregation of public investment serving as an early impetus for private sector investment is evidenced in this example in the context of urban revitalization in a neighborhood called City Heights, located within the city boundaries and east of downtown San Diego, California. With its elevated views of the downtown San Diego harbor, City Heights was born of a trolley stop in the late 1800s, settled in during the subsequent fifty years as a suburban neighborhood prior to World War II, and then experienced a post-war boom as a site for military housing. Through the 1950s and 1960s, the area was regarded as a stable, working class neighborhood. The 1970s and 1980s evidenced a period of economic and social decline and increasing disinvestment. By 1990, the area was experiencing profound social crisis. According to a local newspaper article, in the first quarter of 1990 two homicides, eight rapes, 31 strong-arm robberies, 126 assaults, 235 residential burglaries, 32 commercial burglaries, 240 grand thefts and 199 auto thefts occurred in just a 44-block section of City Heights with a population of 36,000 (Griffen, 1990).

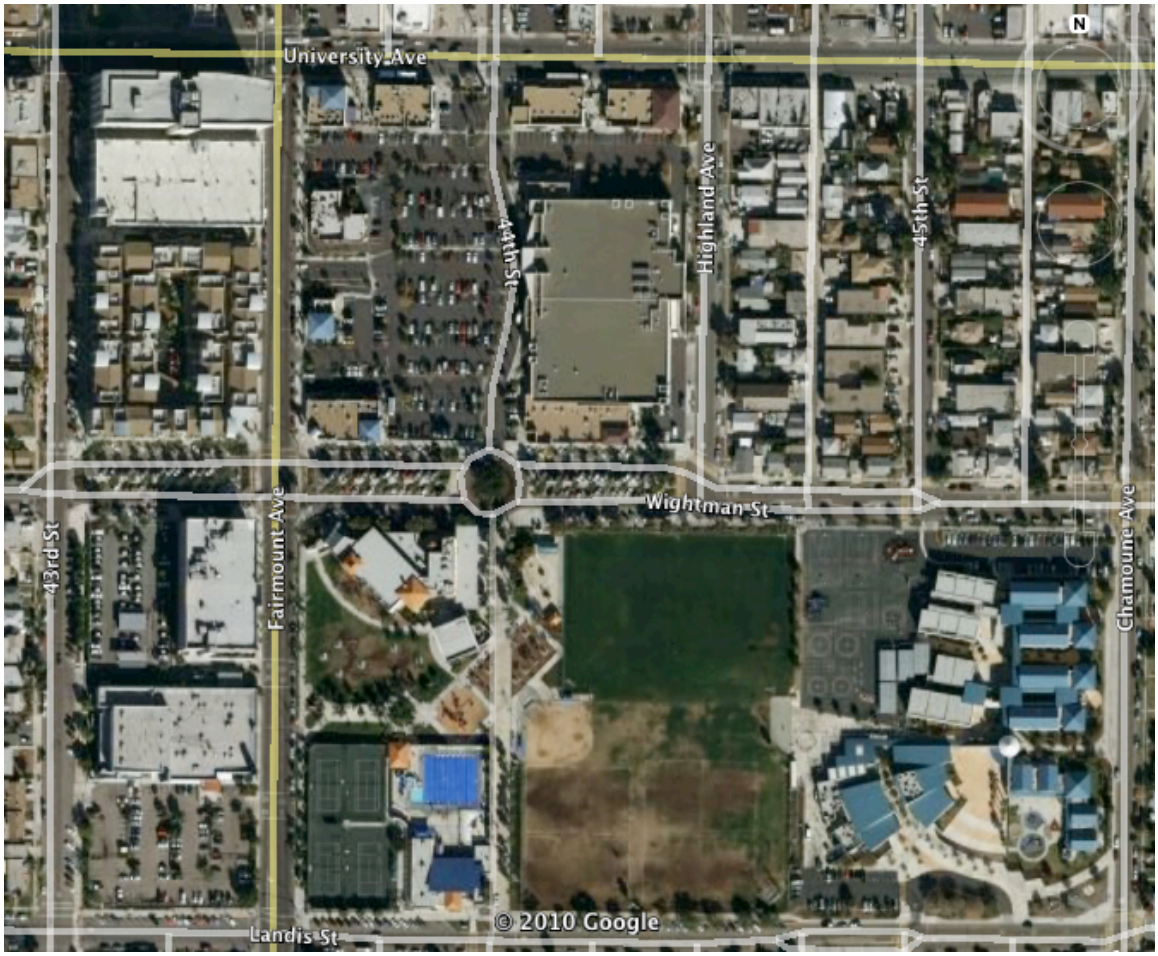
Prompted by the declaration of "a state of emergency" by the city council in 1990, the City Heights Redevelopment Project was born. The Project Area includes portions of the City Heights, Normal Heights, and Kensington-Talmadge planning areas (Figure 2) and encompasses a total of 1,984 acres or approximately three (3) square miles.



Source: San Diego Redevelopment Agency

Figure 2: City Heights Redevelopment Project Area

Within this area, a nine-block section, called the "Urban Village" was created. The project area boundaries are University Avenue to the north, Chamoune Avenue to the east, Landis Street to the south and 43rd Street to the west (Figure 3).



Source: Google Earth

Figure 3: Urban Village Planning Area

In an area such as this, a single capital investment was not going to prove sufficient in providing a catalyst for private sector development. The private sector had not only resisted new investment in the area, but was also continuing to board up their businesses and flee this part of the city. According to Matthew Hervey of Price Charities, a charitable organization that worked in concert with the public agencies and private entities on this project, initiating meaningful and sustainable change in this neighborhood would require an intense, concentrated public investment strategy. In 1994, the city proposed to develop a master design and financing plan for the Urban Village section of City Heights. The initial investment opportunity was a then-recently abandoned 30,000 square foot shopping center. This shopping center was converted into a police substation that also included an 11,000 square foot public gymnasium and 2,850 square-feet of

office space for various city departments on the second floor. The police station, rather than a new school in this instance, was the most pressing and immediate need for this community. This facility was in direct response for a more secure neighborhood and would also provide a recreational outlet for residents. Completed in 1996, this community facility is open to the public well into the evening and offers basketball, volleyball, dance clubs and youth group activities. Two blocks east, land had already been acquired by the city to build a new school – the future Rosa Parks Elementary School. Opened the following year, this school constituted Phase 2 of the project and attempted to relieve severe overcrowding.[2] The park and recreational fields are joint-use facilities shared by the students of Rosa Parks Elementary and the community. Phase 3 included the Weingart Library (Figure 4), a 15,000 square foot facility that also houses a community performing arts center.

Source: Martinez-Cutri Architects

Figure 4: Weingart Library and Performing Arts Annex

This phase also included a community service center and recreation center that comprises swim and tennis facilities. A partnership between the Redevelopment Agency and the San Diego Community College District also produced a continuing education center.

[2] When Rosa Parks Elementary School opened, the facility was over-subscribed 225% as reported by the San Diego Union-Tribune, September 9, 1997.

All of the aforementioned development was completed prior to the year 2000. According to the city's literature, these new facilities played a critical role in reducing the crime rate in City Heights from 1996 to 2000 by 39 percent, paving the way for the opening of the public/private joint venture City Heights Retail Center in 2001, which is anchored by an Albertson's grocery store and includes Starbuck's among the center's tenants. Through its marketing efforts that emphasized crime prevention, infrastructure maintenance and the spending habits of area residents, private developer CityLink Investment Corp. was able to draw retailers to the center where a decade prior they fled.

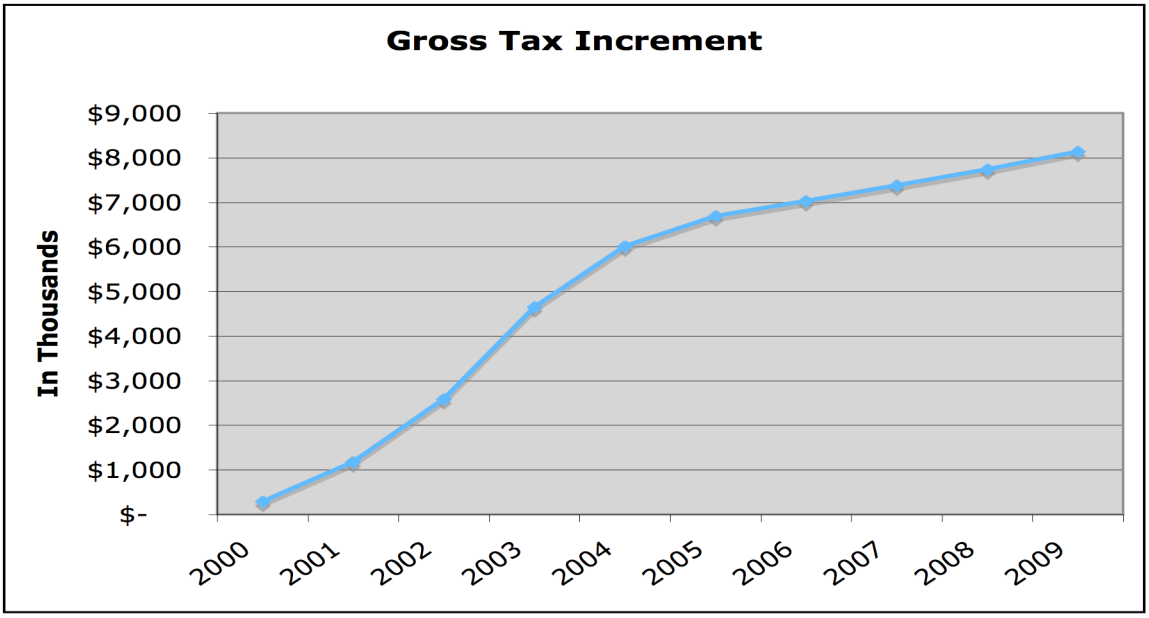
Source: Google Earth

Figure 5: 166-Unit Townhome Complex

Per the city's 2003 CRA (Community Redevelopment Agency) Award of Excellence fact sheet, this retail center was 100% occupied and provided 300 jobs to people living in the surrounding neighborhood. The San Diego Redevelopment Agency issued tax allocation bonds of $16 million to support site acquisition, relocation assistance and site clearing costs. The remaining $17 million came in the form of debt and equity secured by

CityLink Investment. The next project in Phase 6, included a 116-unit townhome project (Figure 5), a six-story office building, and a public parking structure encompassing the entire block of University Avenue, 43rd, Wightman, and Fairmount Streets. This mixed-use project, as well, was funded by both public ($19.5 million) and private ($25.5 million) sources.

The Urban Village was predominantly financed through the CRA's tax increment financing revenue. Figure 6 depicts the gross tax increment collected each year since 2000 (the first year that tax increment revenue numbers were available). The entire 3-mile Project Area (tax revenue specific only to the 9-block Urban Village was not available) generated over $8 million in incremental tax revenue in 2009. Table 1 shows the extent that the historical assessed valuations increased from the period 2004-2009. Despite declining levy rates, incremental property tax revenue increased over 150%.



Source: San Diego Redevelopment Agency

Figure 6: City Height Redevelopment Area Tax Increment

Table 1: Historical Assessed Valuations and Tax Increment Receipts

Fiscal Year	2004/05	2005/06	2006/07	2007/08	2008/09
Total Assessed Value	$1,029,035	$1,108,075	$1,273,190	$1,454,175	$1,533,092
Less: Base Year	(689,090)	(689,090)	(685,572)	(680,708)	(680,708)
Incremental Assessed Values	$339,945	$418,985	$587,618	$773,467	$852,385
Total Levy Rate	1.0108%	1.0104%	1.0097%	1.0095%	1.0093%
Property Tax Revenue	$3,436	$4,233	$5,933	$7,808	$8,603

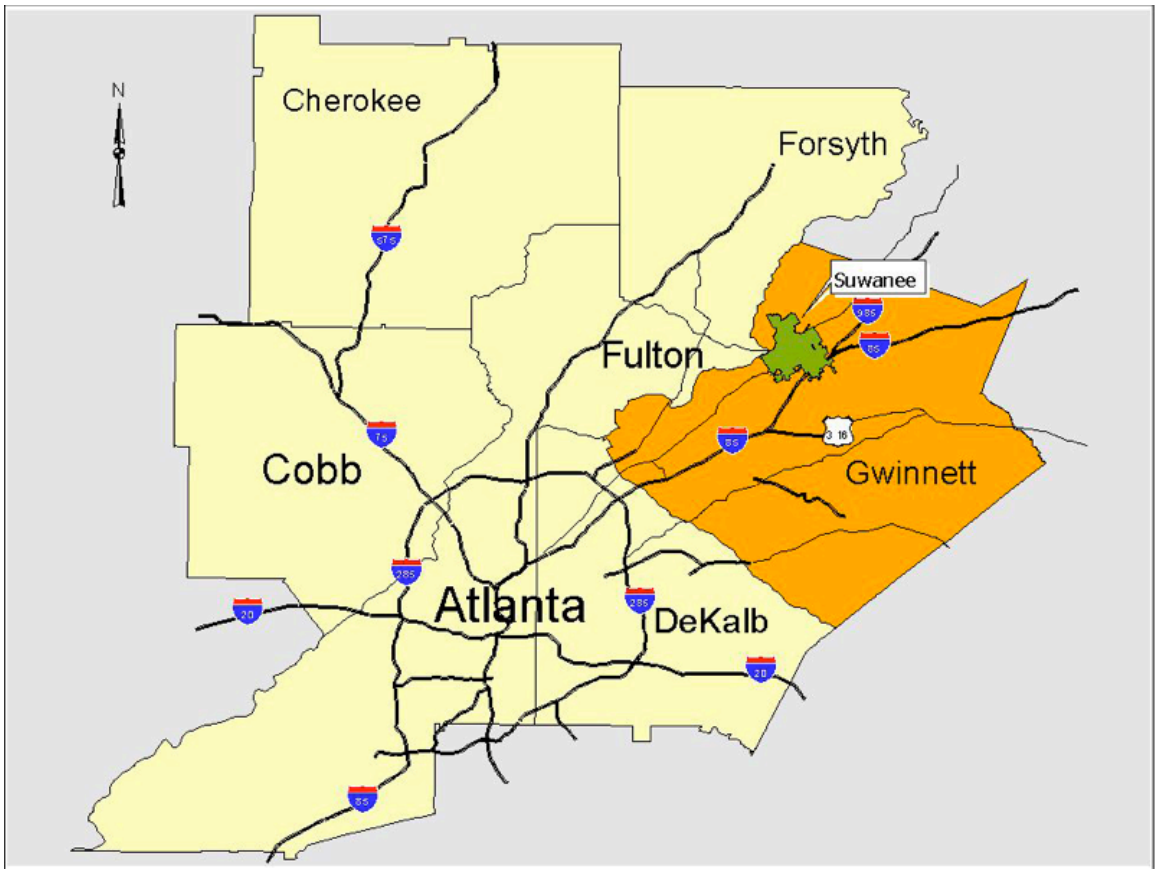
Source: San Diego Redevelopment Agency

The City Heights example illustrates that an intentional and sustained investment strategy, organized in a cluster to allow each investment to leverage upon another, can eventually create a sustainable development that provides the impetus for continued private sector development even the most difficult environments. With the proper social infrastructure securely in place (police station, school, library and public recreational assets), the private sector was afforded the opportunity to participate in this compact, mixed-use environment. The planning area, not defined by distinct property lines, but by a defined geographic area that transcends individual property boundaries, can allow private investment within each entity's area of expertise and can allow for incremental, or small scale projects that are more easily financed and carry lower risk. Meanwhile, the public sector continues to create elements that foster a sense of community. Both the public and private sectors invest through time according to a master planning area instead of in a scattered patchwork fashion. This Urban Village was made possible through the support, in the form of pooling financial resources, and cooperation of several city departments including the library system, the Community and Economic Development Department, Park and Recreation, the Police Department and the San Diego Unified School District. Private funding was provided by CityLink Investments, Trans West Housing Corp., The Retail Initiative, and Price Charities, among others.

The next public sector initiated development strategy is demonstrated in the city of Suwanee's Town Center, a somewhat less capital-intensive but nevertheless ambitious master-planning and investment strategy.

2.4.2 Town Center, Suwanee, Georgia

What today is a vibrant, mixed-use center anchored by a 10-acre urban-style park and surrounded by 100,000 square feet of retail, 87,000 square feet of office, 147 town homes and condominiums and 85 single family residences began as a municipality's commitment to open space. Located 30 miles northeast from Atlanta (Figure 7), the city of Suwanee covers an area of approximately 11 square miles.



Source: City of Suwanee 2030 Comp Plan

Figure 7: City of Suwanee Location Map

Suwanee, like many of the northern metropolitan Atlanta suburbs, experienced tremendous growth during recent times. In the decade from 1990 to the year 2000, the city's population grew in excess of 260% according to the U.S. Census Bureau. From 2000 to the present, Suwanee has seen its population nearly double again to over 16,000 residents.

In 2000, the city adopted a 2020 Comprehensive Plan with land use policy aimed at creating sustainable communities. The preservation of usable open space was a primary goal. Toward this end, the city instituted a $17.7 million Open Space Bond Program. In November 2001, the residents passed this green space and open space referendum, voluntarily doubling its taxes.[3] From October of 2002 to April of 2003, the city purchased 200 acres of park land. Ten acres of which was for the future Town Center Park located at the intersection of Lawrence Suwanee Road and Buford Highway, among the city's most heavily traveled roadways (Figure 8).

Source: Mapquest

Figure 8: Suwanee Town Center Site Location Map

[3] A June 3, 2003 article in the Atlanta Journal Constitution cited an increased millage rate from $2.55 to $5.99 per $1,000 of assessed value.

This open space acquisition provided the platform for the city's effort to assemble a community-gathering place that would compliment its historic downtown, located approximately one mile west. The Atlanta Journal Constitution quoted Alan Dickerson, a spokesman for the State Department of Community Affairs, as saying that no town or city in Georgia had ever decided to build a new town square apart from its old downtown before Suwanee (Davis, 2003). Suwanee would proceed in the role of master developer for a 63-acre Town Center planning area. The project would included the 10-acre park, a 13-acre mixed-use tract surrounding the park, and a 40-acre residential site purchased and constructed by Bowen Family Homes, a private developer, but planned and entitled by the city.

Interviews were conducted with the current City Manager, Marty Allen and Amie Sakmar, Director, Financial Services Department. Table 2 provides a summary of the public investment for this project.

Table 2: Town Center Public Investment Summary

Description	Park	Commercial	Total
Land	$2,073,790	$1,457,148	$3,530,938
Improvements	$4,464,718	$223,018	$4,687,736
Total Costs	$6,538,508	$1,680,166	**$8,218,674**

Source: City of Suwanee Records

The funding structure for Town Center is summarized as follows:

Town Center Funding Sources:

Park:

- Open Space Bond ($4,044,329). The entire purchase price for the park land acquisition was funded through Open Space Bond funds. In addition, this source was used to pay just under $2 million for park improvements, for a total of just over $4 million.

- SPLOST Recreation ($1,580,774). This Special Purpose Local Option Sales Tax for recreation was used to fund $1.5 million in park improvements.
- SPLOST Transportation ($717,572).
- Other sources used to complete the funding of the park included contributions from a Better Parks Campaign and a county grant totaling $195,833.

Commercial:

- URA Bond ($1,464,320). During the fiscal year 2003, the city issued this $1.4 million in revenue bonds to finance the costs of acquiring and improving land to be used for the future City Hall location. The bonds, maturing in September 2012, had an interest rate of 4.41%. The revenue bonds were paid off in fiscal year 2005, a full seven years ahead of maturity.
- Livable Centers Initiative funding ($10,000).

In addition to the $8.2 million investment in the park and commercial property, the city constructed a 23,600 square foot City Hall facility within the project (Figure 9).

Figure 9: Town Center City Hall

This investment in this building totaled over $9.5 million. Funding for this facility was obtained through the URA bond ($6,587,867), URA proceeds from land sales ($2,641,509) and interest earnings ($307,479). In aggregate, the city invested in excess of $17 million.

The commercial tract was subdivided into 5 tracts. One tract was reserved for the new City Hall, and the remaining four parcels were sold to private developers. Following is a summary of these four land transactions (Table 3).

Table 3. Town Center Revenue Summary

Purchaser	Date	Revenue
Main Street Corners, LLC	9/1/2004	$1,053,051
Madison Group	3/22/2005	$1,155,000
Madison Group	5/4/2006	$775,000
Madison Group	2/4/2008	$682,509
Total Revenue		**$3,665,560**

Source: City of Suwanee Records

This case study demonstrates two points. First is the fact that the private sector could not have produced such a project. Even leaving out of the cost equation the expenses associated with the City Hall facility, Suwanee still invested in excess of $8 million dollars, only to generate $3.6 million in revenue from parcel sales. The second related point is that because municipalities have such alternative sources of funds available, projects like this one can happen. In this example, significant, concentrated public investment was made that reduced the financial pressure for the private sector to create the public amenity. This enabled the private sector to concentrate efforts within its area of expertise. The scale of the project for the private sector was reduced which allowed individual parcels to be purchased. This public investment only makes sense because it helps to achieve other goals. This city prioritized its commitment to open space for its citizens. Public policy and the tools to achieve this aim were then enacted that created an identity for the city. Suwanee demonstrates the proactive approach to not only planning for mixed-use nodes within its city, but also serving as a catalyst for such development.

2.5 Sustainability

In order to use the terms 'sustainability' and 'sustainable development', it is imperative that we first have an understanding of what they mean. In the news, in academia, and in everyday life, one is bombarded with the all things "green", "sustainable", and "eco-friendly". Sustainability can be defined as the ability to "meet the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987). To create a sustainable lifestyle and efficient resource allocation, three elements must be considered: social, environmental, and economic. Any one of these without the other is insufficient in defining sustainability. Economic sustainability can be defined as "cash flow sufficient to cover expenditures while providing returns for shareholders" (Nozick, 1992). We might also add that economic sustainability includes an ability to meet long-term financial obligations. For

decades, corporations have pushed to bring product to market quicker, manage inventory 'just in time', and have been driven by a stock market that overemphasizes short-term gains. Inherent in this discussion is the conflict of time. Sustainability is asking that we concern ourselves with the next decade or even the next century. Stewardship of resources is required for the health and well being of future generations. The net result of short run decisions determines our long run. For something to be sustainable, it is the long run that must ultimately be satisfied.

Social sustainability concerns itself with safety, both of person and of property (Hancock, 1993). Socially sustainable development meets basic needs for food, shelter, education, work, income and safe living and working conditions. Sustainable development enhances, or at least does not degrade, the well being of the population. Education, creativity and the development of human potential is promoted. The aim is to preserve our cultural and biological heritage and strengthen our sense of connectedness to our history and environment (Hancock, 1993). Beyond these factors, there exist more esoteric notions of social sustainability. These notions amount to the aspiration for 'the good life'. Hanifan (1916) was among the early advocates of the cultivation of things like fellowship, goodwill and the otherwise strengthening of social networks in the context of the rural schools' role as community center. Jacobs' (1961) subsequent contribution to the concept comes through her study of the role of the built environment in the urban context.

There are social and environmental consequences of attempting community development based on purely economic justification. Environmental degradation and climate change are examples of such consequences. For a practice to be environmentally sustainable, it would consume less energy and materials than can be reproduced, and emit less toxins than can be naturally absorbed (Dyllick and Hockerts 2002). Industry, generally, does not achieve full environmental sustainability. Instead, it produces negative externalities – adverse side effects of certain market activities - on others. The capitalist system can fail to deal with these adverse side effects. The typical solution in the United States is to use the tax system to align private incentives with social costs (Nelson and Moody, 2003). In the building and development industry, fees and exactions are imposed in an effort to offset negative externalities.

Elkington (1994) coined the phrase "triple bottom line" as a way for corporate managers to measure achievement of all three of these sustainability levels. The context of this phrase came from the environmental movement, but was pointed directly at corporations. The intent was to begin to keep score on corporate performance, not just as it relates to economic performance, but also the environmental and social value that these corporations either create or destroy. New forms of public-private partnerships have formed that blur the line of traditional separation of market and state, weakening the emphasis on maximizing profit.

> "Public investment . . . should remind society of what economic growth was for. The pursuit of money . . . was justified only to the extent that it led to a good life. And a good life was not what made people better off, it is what made them good. Public investment in the arts, education, sport and architecture should remind society of what economic growth is for.
>
> *Robert Skidelsky (2009)*

2.6 Current Response to Sprawl

By the 20th Century, the urban core of most of today's major American metropolitan areas were establish, and the subsequent 100 years saw an explosion of outward expansion (Corrigan, 2004). American land use planning in the twentieth century led to a number of problems that have been extensively cataloged. Dependence on cars and strict separation of uses has led to a dispersed development pattern and the creation of seemingly identical suburbs across the nation (Kunstler, 1994). The expansion of metropolitan areas consumes natural resources. A 2004 report by the Urban Land Institute provided the statistic that two million acres of open space was being developed each year in America. This 'conventional' development pattern is not sustainable because of its consumptive use of land and low-density form that leads to inefficient use of infrastructure (McClelland and Schneider, 2004). Economically, local officials now realize that paying for, and maintaining, roadways, sanitary sewer, public service protections, and other infrastructure spread over large and reaching distances is

inefficient and expensive (Haughey, 2005). Another detriment of the sprawling and single-use development pattern is diminished civic engagement, or social capital (Putnam, 2000). Putnam attributes the concept of social capital to L.J. Hanifan, a state supervisor of rural schools in the early 1900s. Hanifan defined the concept as that which increases social cohesion and personal investment in the community. Weakened social capital can be evidenced in lower levels of involvement in civic organizations, voting, church attendance and other community engagement (Putnam, 2000). Holding constant characteristics such as age, education, marital and job status, earnings and home ownership and region of the country, Putman (2000) demonstrated that the residents of a major metropolitan area were found to be less involved in civic activities than were other persons with the same characteristics living in a small town. He also attributes suburban sprawl as a significant contributor to civic disengagement since the 1960s for three reasons. First, greater time spent on commuting leaves less time for civic pursuits. Second, the associated social segregation and social homogeneity evidenced in typical suburban communities reduces opportunities for social networks beyond these race and class lines. Third, the sense of a geographic community is diminished by settlement patterns that lack boundaries (Putnam, 2000). Political scientist Eric Oliver (1999) found a negative correlation between community homogeneity and civic engagement. "By creating communities of homogenous political interests, suburbanization reduces the local conflicts that engage and draw the citizenry into the political realm" (Oliver, 1999). Oliver suggests that the dawn of suburbanization experienced a surge in civic engagement – such as 1960s activism – but that the increasingly tighter parameters of race, class, education and life-stage delivered in our subsequent suburban communities reversed this trend. Population trends in America suggest increasing percentages of our populations live in metropolitan areas as opposed to non-metropolitan areas (Putnam, 2000). The suburban ideal of the early 20th century gave way to a different reality, one described by urbanist Lewis Mumford (1961) as "the collective effort to lead a private life".

The new urbanist movement recognizes this loss of community, the efficiencies of compact development patterns, and the resultant availability of open spaces. This movement, albeit characterized by many constituencies with their own agendas and

interpretations, is summarily characterized by a planning model of concentrating densities in urban nodes, encouraging compatible mixed uses, and providing for transportation alternatives beyond the automobile. Smart growth seeks to alter public policy in an effort to shift public and private investment patterns (Fulton, 2003). Smart growth harkens back to the vibrant form of cities, villages and townships that enable what Jane Jacobs (1961) observed as the "unplanned spontaneity of uses". While the physical construct of the new urbanist theory is evidenced in both urban and suburban contexts, some current manifestations of smart growth in the suburban context are unsustainable.

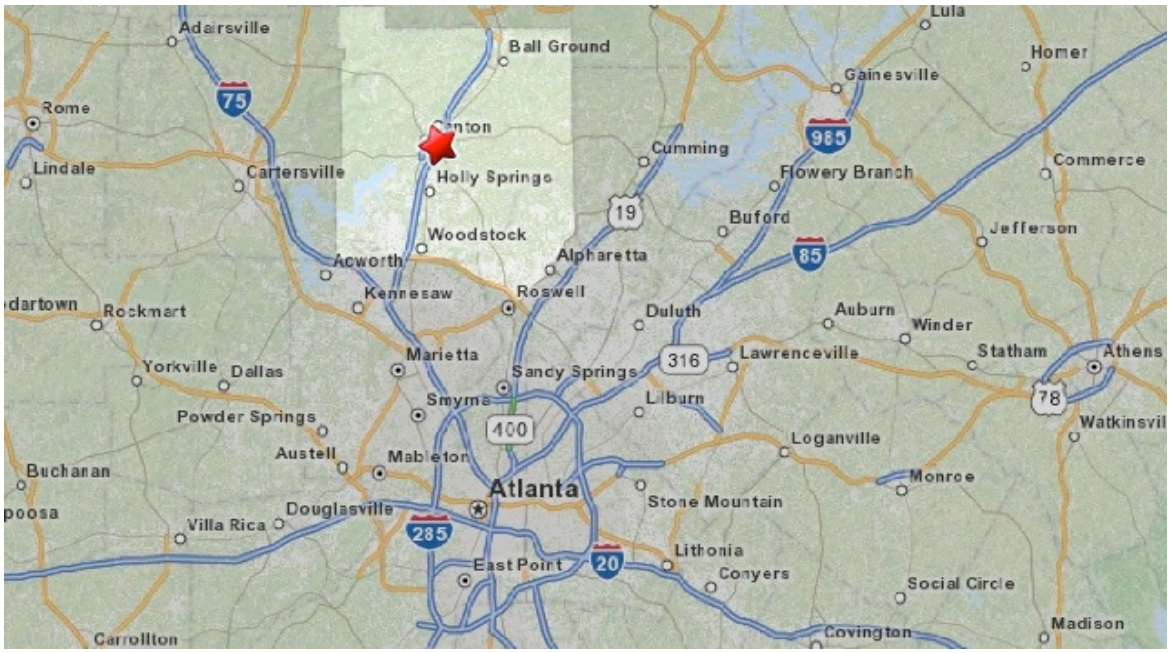
Many of the suburbs in Atlanta have been built, and continue to be built, along a single transportation mode (Smith, 2009). Because of deficiencies in the zoning code, these suburban communities have few dense, concentrated nodes that make serving any significant percentage of the suburban population with alternative forms of mass transit financially unrealistic. A non-profit organization, The Congress for the New Urbanism, articulates a vision of the built environment that includes diversity, alternate transportation, the creation of accessible public spaces and community institutions. While suburban new urbanist communities developed in the last decade nationally and in the Atlanta metropolitan area have implemented several of the tenants of smart growth, the critique has been that they can feel contrived and failed to produce places that truly anchor communities (Kent, 2009). Kent critiques the all-to-common phenomena of new, mixed-use developments that focus primarily on shopping destinations. The public sector, with its cultural, educational and recreational institutions can dovetail with private sector, smart growth initiatives to complement the effort (Passmore, 2002).

Beyond the criticism of smart growth, it is important to understand that the time value of money plays a role in project decision-making. While public money is patient, private capital is not. As illustrated previously in the Town Center case study, public sources of funds carry lower interest rates and provide for longer durations for pay back than do traditional private sector funding sources. Further writing on the unique challenges to compact, mixed-use projects can be found in Appendix B. The following case study of Cherokee County illustrates, through observations and examples, the evidence of school sprawl and opportunities available for better alignment between the various agencies within this county.

CHAPTER 3:

Case Study: Cherokee County

Cherokee County is located approximately 30 miles north of the city of Atlanta and has a landmass of approximately 429 square miles (Figure 10). The incorporated cities within this county are located, with one exception, in close proximity to an interstate, which bisects the county and runs north and south. These cities include Woodstock, Holly Springs, Canton, Waleska and Ball Ground.



Source: www.mapquest.com

Figure 10. Cherokee County Site Location Map

Prior to the 1980s, the county was still largely rural and agriculturally based. As the city of Atlanta grew, roadways improved and were expanded and the county began to serve as a bedroom community to metropolitan Atlanta.[4] For the county as a whole, the 1990 census stated a population of 91,000, for the year 2000 it was 141,000, and for 2010 the population is estimated to exceed 210,000. Cherokee County experienced among the

[4] Cherokee County Community Assessment Report, Volume 1: Issues and Opportunities. January 2007.

most dramatic growth rates in the nation in terms of housing unit delivery and population growth between the year 2000 and 2007.

Unincorporated areas within the county realized higher rates of growth in population than did the growth rates experienced by its incorporated areas (Figure 11). From 1990 to 2000, the incorporated areas of the county experienced a 46% population increase, and the unincorporated areas in the same timeframe experienced a 59% increase. The growth of population outside the cities is expected to continue. It is the continued suburban expansion, not just in this county but nationally, that concerns advocates of smart growth (Curnette, 2001). Therefore, efforts to address sprawl that provide for solutions in the suburban and rural contexts are meaningful.

Growth Rates of Incorporated Areas within Cherokee County

City/Town	1990 Census	2000 Census	Percentage Increase 1990-2000	2003 Estimate	2008 Projection	Percentage Increase Anticipated 2000-2008
Ball Ground	735	730	-0.68%	812	924	26.58%
Canton	5,830	7,709	32.23%	9,740	13,018	68.87%
Holly Springs	2,708	3,195	17.98%	3,626	4,244	32.83%
Waleska	486	616	26.75%	689	795	29.06%
Woodstock	5,721	10,050	75.67%	11,811	14,519	44.47%
Total Incorporated Areas	14,745	21,570	46.29%	25,866	32,576	51.02%
Total Cherokee Co.	90,206	141,903	57.31%	167,024	205,658	44.93%
Unincorporated Areas	75,461	120,333	59.46%	141,158	173,082	43.84%

Source: Cherokee County Recreation and Parks Authority Comprehensive Master Plan

Figure 11: Growth Rates within Cherokee County

Cherokee County officials are currently planning for another doubling of its population in the next twenty years, to 417,000 by the year 2030. In 2008, the county adopted a Comprehensive Plan ("Comp Plan") in an effort to balance the wants and needs of the community to produce a sustainable solution to this pending growth. According to an assessment performed to inform public officials of the attitudes of their constituents and documented in the Comp Plan, current residents have a desire to maintain a small-town character. At the same time, the county officials charged with providing services desire to participate in the economic opportunities of an expanding regional economy and thereby strengthen the tax base. The Comp Plan is to serve as a guide for setting policy

that ultimately dictates the manner and form of future development. A review of the Comp Plan reveals some poignant assertions as they relate to growth, density and pattern of development. As stated in the Comp Plan:

- An increase of almost 90,000 housing units by the year 2030 is forecasted for the county.
- The Future Land Use Map utilizes a designation for parks and recreation, open space, and conservation.
- The current land use patterns and policies promote sprawl.
- Single-family development, particularly larger lot development, tends to consume farmland and natural environmental areas at much greater pace than conservation-designed development and higher density residential products.
- New schools can be a strong catalyst for attracting growth to areas where growth is planned, desired, and supported by other necessary infrastructure.

While the Comprehensive Plan both identifies the catalytic nature of new school construction for growth and then goes on to acknowledge the difficulty that schools will face in keeping up with demand, there is no policy statement or school element in the plan. The failure to make the connection between schools and a municipality's plan for growth is not uncommon, but there are municipalities that have incorporated such strategic planning within their comprehensive plans.[5]

The history of the Cherokee County public school system is marked by a consolidation effort in 1956. Prior to this time, the county maintained individual schools in various parts of the county. These schools were located not only in the incorporated cities of Canton, Woodstock and Ball Ground, but also in the heart of various unincorporated communities such as Hickory Flat and Free Home.[6] For the most part prior to the 1950s, these schools served all grades. They were the 'community' school and were centrally located to the communities they served. As population growth

[5] Durham County, North Carolina is one such municipality. See Appendix D.
[6] School history from www.cherokee.k12.ga.us/Schools website.

continued, the school system built high schools and middle schools. It was the middle schools and high schools that were located outside of the immediate community center. The older, smaller community schools from the past were first converted to K-8 and then eventually K-5. For this reason, one sees many elementary schools that have survived the ages located in the core of the communities they serve. From the 1950s until 1976, Cherokee High School served the entire county. Four hundred square miles of high school-aged students traversed the county to attend each school day. In 1976, Etowah High School was built to serve the south end of county. This high school preceded growth and was built on a dirt road. Since the 1970s, the school district has expanded its existing facilities and added new schools. At the time of this writing, the system includes twenty-two (22) elementary schools, seven (7) middle schools, five (5) high schools and a small number of intermediate and education centers.

This case study focuses on the location, landmass, and enrollment for high schools in Cherokee County. The framework of this study is to demonstrate how schools, parks and other public capital investments like public libraries can leverage one another to produce the social nucleus of a community and create the critical mass that will attract private development and ultimately lead to more sustainable development patterns and healthy, vibrant communities. High schools present the more difficult problems in terms of how to accommodate the ever-growing needs for larger and more extensive facilities, the availability of land to house these facilities, and the operational problems of maintaining such facilities once constructed. However, these same challenges can also be used to the advantage of the communities they serve. High schools in particular, but also to a lesser extent middle school and elementary school facilities, are conducive for joint-use, whereby functional assets of school facilities would serve the geographic community in addition to the school community. An example of this would be a library that serves as a local branch and playing fields or gymnasiums that are open to the public.

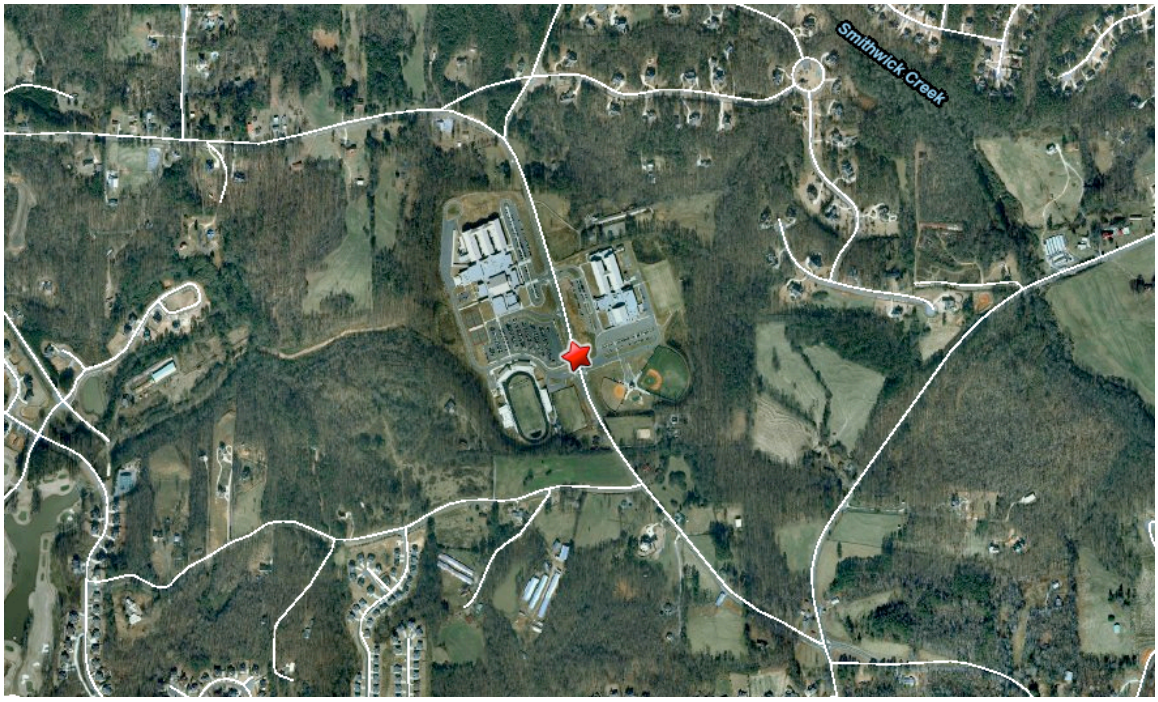
In contrast to such a facility, what follows is a close examination of the most recently completed high school in Cherokee County. The information for this section of the study was gathered through an interview with the Assistant Superintendent in charge of Support Services, Facilities and Construction Management for the Cherokee County Schools. The interview is included in Appendix F.

The Creekview High School facility is located in the northern suburb of Cherokee County, Georgia and was completed in 2006. The parcel size of this facility, together with the middle school across the street, is 90 acres. The high school was designed for an enrollment capacity of 1,800 students. The area around the school is zoned for low-density residential use. The school district started acquiring this property in 1988 and completed the acquisition if the final parcel in 1990, fifteen years prior to construction.

Source: Google Maps 2010.

Figure 12. Creekview High School Aerial

From this image (Figure 12) one can see the school campus firmly set in a low-density residential area. The orange line illustrates the route to the closest major intersection, being Hwy 20 and South Cherokee Road. This intersection constitutes the unincorporated community of Macedonia, and is approximately 2.5 miles from the school site. The green line illustrates the route to the next proximate major intersection, being the unincorporated town of Free Home, Georgia. Figure 13, below, is another wider image showing the school site in the context of eastern Cherokee County.



Source: www.mapquest.com

Figure 13. Creekview High School Aerial in Eastern Cherokee County

As illustrated in Figure 13, the school is located in a greenfield setting, two to three miles from the nearest major arterial roadway network that connects the cities and townships of this county. Below is an analysis of the policy and criteria used to guide this school site selection.

The site selection criteria for the Cherokee County School system includes:

- Compliance with the state minimum acreage requirements.
- Risk/hazard considerations.
- Geographic coverage relative to existing school attendance boundaries.

The minimum state acreage requirement for a high school is 20 acres plus 1 acre per 100 FTE (full time equivalent) students. The Creekview High School planning model used was for a maximum enrollment capacity of 1,800 FTE students. Using this formula, the minimum site requirement is 38 acres. Since this site combines both the high school and a middle school (across the street), we must add the middle school requirement, which is 15 acres plus 1 acre per 100 FTE students. The middle school was planned for

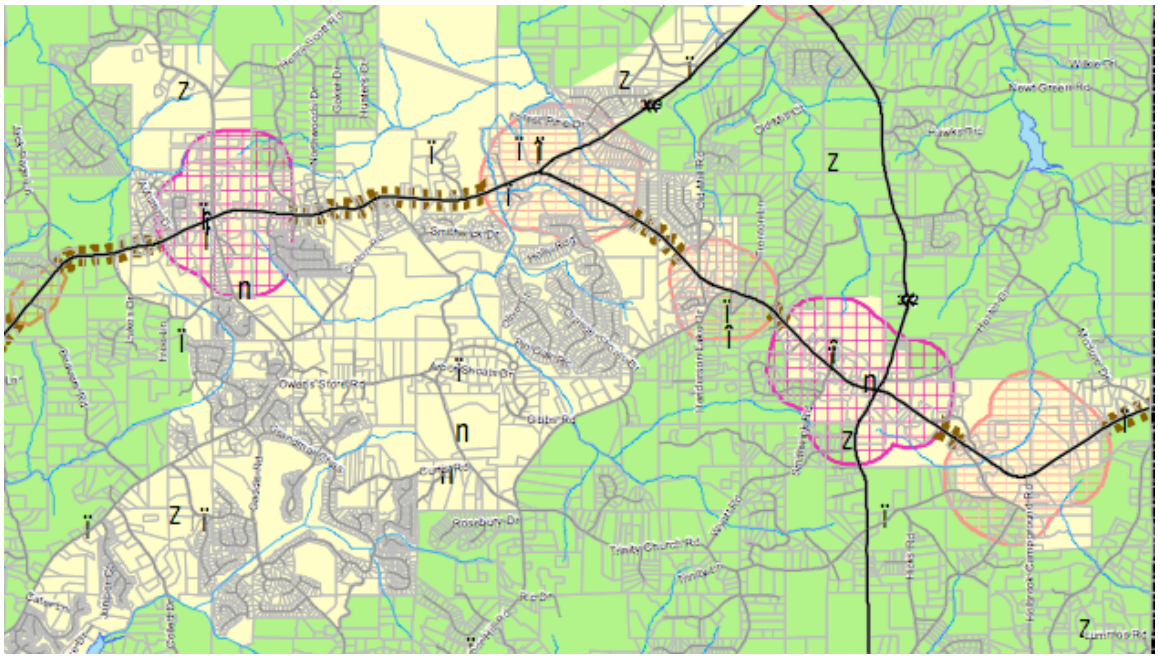
1,500 FTE students. Therefore, this portion requires an additional 30 acres yielding a grand total minimum state requirement of 68 acres. This site comprises 90 acres. The fact that these schools supersede the state minimums by more than 30% is evidence of what has been routinely called "school sprawl" (Passmore, 2002). The condition of school campuses increasing in size is not unique to this school system. Reasons for the trend include the general disconnect between the school site selection process and land use goals of the jurisdiction, the schools systems preferences for larger, consolidated facilities, and fiscal pressures to seek inexpensive, or in some cases donated, sites which can be located on the fringes along roadways experiencing lower traffic counts. Confirming the trend of increasingly larger facilities on a national level is a report by the National Center for Education Statistics (NCES) highlighting that school enrollment in the U.S. nearly doubled from 1930 to 2001, yet the number of public school buildings decreased 60 percent over the same timeframe (Sharp, 2008).

While there exists no policy, but merely a listing of existing facilities, in the Cherokee Comp Plan that could guide the location of school facilities, and thus the areas where residential growth would tend to occur, the Comp Plan similarly offers merely an account of the park and recreation and library facilities currently in operation. The entity that runs the public parks in the county is the Cherokee Recreation & Parks Authority (CRPA). Created in 1995 through the Cherokee County Parks and Recreation Act, CRPA is an independent, profit-based public corporation. In 2004, this authority set out to plan the facility needs of the county through a CRPA Comprehensive Master Plan. This plan includes a more detailed assessment of existing facilities, it forecasts future facility needs, and offers recommendations of methods of realizing these goals. Among these recommendations includes a section entitled "Partnership with Schools". This section states:

> *"The economic case for Cherokee County and the school district cooperating to provide recreation facilities is compelling. Both users provide facilities that could be used by either party. Currently there is limited partnering with the school district and generally based upon available time at CPPA indoor facilities. The Authority uses some school facilities as a backup user to the school's primary use. There appears to be a tremendous opportunity for this partnership to be enhanced" (Cherokee County Recreation and Parks Authority, 2004).*

The report goes on to explain that such a joint provision is likely to result in savings from reduced land acquisition costs, development costs, and operating expenses. As well, the hours of use for the school population and the community population are generally complementary. Despite the acknowledgement in this report that such facilities would prove to be a more efficient use of taxpayer dollars, few such instances of cooperation are evidenced.

Organized, planned, and concerted effort to bring together other forms of public investment, aside from the aforementioned transportation spending such as the Beltline, could create this catalyst. In many cases, these planned urban nodes already exist. In our Cherokee County example, they include unincorporated communities like Macedonia, Free Home, Holly Springs and Lebanon. The Cherokee County planning staff has already recognized the need to incorporate more dense 'nodes' of development, as illustrated in Figure 14.



Source: Joint Comprehensive Plan for Cherokee County, Ball Ground, Waleska and Woodstock

Figure 14: Density Nodes in East Cherokee County, Georgia.

This map section of the Comprehensive Plan for East Cherokee calls for "Community Village" nodes at two prominent intersections: one being the intersection of State Route 20 and East Cherokee Road and the second being the intersection of State Route 20 and State Route 372. Not coincidentally, these are the townships of Macedonia and Free Home, respectively. As discussed earlier in this paper, the investment of public middle and high schools was made in 2006 approximately two to three miles away from either of these nodes. According to the current Comprehensive Plan, these Community Village nodes would allow for the "compatible mixture of higher-density uses". Primary land use elements for future development include grocery and home improvement stores, restaurants and other entertainment outlets, service establishments like dry cleaners and coin laundry, and professional office space. The secondary land uses include community institutions such as schools, churches, daycare and emergency services. These townships are currently just points on a map. Perhaps long-time residences identify themselves as 'from Free Home' or 'from Macedonia', but the history and culture of these smaller townships is rich and worthy of not only preservation but also enhancement so that they can become more widely identifiable. For example, Free Home's history dates back to the late 19th Century, when a civil war captain and area land owner offered free land to families that worked the land so they could build a home. From this, the name of the area became known as Free Home.

The opportunity for the school built in 2006 to impact either of these townships in a meaningful way has passed. But confirmation of the efficacy of congregated public facilities exists. The Cherokee Recreation and Parks Authority is currently in the planning stages of a park facility that will also accommodate a new library branch and community center. According to Susan White, the Director of the Sequoyah Regional Library System, an informal collaboration with the County resulted in this facility being incorporated in the planning of this park. After fruitless searching for a facility to service this eastern section of the county, Ms. White met with the County Manager to discuss the problem. CRPA had been engaged in a facility land search for some time, and it was agreed that accommodating the branch library within the park facility was desirable.

The total public investment to serve the citizens in this portion of the county is summarized in Table 4. In total, over $71 million is committed to this section of the

Table 4: Planned Public Investment for east Cherokee County.

Description	Cost
School Land	$797,400
School Improvements	$52,000,000
Park Land	$4,479,000
Park Improvements	$14,000,000
Total Investment	$71,276,400

Sources: School Land–Tax Assessor Website; School Improvements- Russ Sims, Assistant Superintendent, Cherokee Public Schools; Park data-Michael Brantley, Superintendent, CRPA.

county in total public investment for a school, park, and library. As stated previously, such levels of investment are by far the largest capital commitment such areas will likely ever see.

Focusing on one suburban county allowed for the discovery of many of the points of view among intergovernmental agencies and allowed for the congregated and joint-use facility concept to be examined in context. Personal, semi-structured interviews were conducted with members of the county planning department, school system, regional library system, and parks and recreation department. The focus of these interviews was to discover attitudes toward the concepts of co-located and joint-use facilities. I did not discover any strict policy that would preclude such strategies. During the interview, the interviewees were given an overall summary of the research project. Through these interviews I discovered general consensus that such strategies could make sense. However, communication and collaboration between these various agencies was found to be minimal and informal.

CHAPTER 4: Conclusions and Recommendations

This paper set out to examine a few key questions in the pursuit of evaluating whether or not congregated public facility investment and the creation of a planning area that incorporates this investment can provide an impetus for a sustainable private sector response. In examining why the current response of "smart growth" or compact, mixed-use communities has limited ability to create a sustainable solution to suburban sprawl, we set out a definition of sustainability. The definition used herein contends that three elements require satisfaction in order for a method or process to correctly be called sustainable. These elements involve environmental, social, and economic considerations. Environmental impacts of more compact, mixed-use development projects succeed in diminishing the physical footprint of a given development project. The higher the density, the fewer acres of impact to the environment is required to house a fixed number of dwelling units or square footage of commercial space.

The current response of mixed-use communities perhaps does less to augment social capital than could otherwise be the case. Examples of ways that social capital is increased include the preservation of cultural or biological heritage or other means of strengthening connectedness to one's history and environment. These are notions of what creates a 'community feel' that can lead to increased levels of civic participation among the members of the community. The connection between the opportunity to shop proximate to where one lives and increasing social capital is tenuous. However, the social infrastructure offered by way of public investment in schools, community recreational space and libraries does offer such opportunities, particularly when these assets are for use by the broader geographic community. The joint-use and co-location of such facilities among those enrolled in the schools and the surrounding general public is an important component in capitalizing on the social benefit afforded by these public assets.

Schools are of particular importance because they immediately create a social community. These are institutions that have the ability to become a part of a community's fabric and influence its character. Public recreational facilities can and do create social community to the extent activities such as organized sport and other

programming is employed. Teams and leagues can foster a sense of community identity. As well, the public library that goes beyond its traditional use of lending books and functions to facilitate non-traditional uses like a place for students to study, a meeting venue for friends, and exhibit space for community artists and performers has the power to increase social capital in a very meaningful way.

The third element of sustainability, economic justification, perhaps presents the most difficult challenge for compact, mixed-use communities to become increasingly replicable in the suburban context. Compact development theoretically reduces maintenance costs. The fewer miles of infrastructure such as roads, public water supply, and sanitary sewer required to serve a given population, the lower the cost necessary for its maintenance. But before such economies can be enjoyed, these villages and town centers must be built. A survey conducted among a sample of development professionals in the Atlanta metropolitan area suggests that this type of development pattern exacts unique barriers and hurdles beyond that of the more conventional development pattern of low-density and single-use communities. Despite efforts by governments to encourage smart growth, very few of the survey respondents believed that entitlement, market acceptance and the ability to finance are tasks that are less difficult than is the case for conventional developments. Specifically, when asked to indicate whether compact, mixed-use developments were more profitable, less profitable, or similarly profitable, all participants responded that compact, mixed-use projects were either equal-to or less profitable than conventional developments. If these types of projects are more difficult to entitle, are considered riskier in terms of market acceptance and are more difficult to obtain financing without higher levels of profitability to compensate, it would be reasonable to expect comparatively fewer of these projects to be built. While society would rightly benefit from corporate performance measurements that extend beyond profit maximization and account for the creation of environmental and social value, this is not always the case. Therefore, efforts to devise government policy and programs to level the playing field should be examined. Public money is patient and has staying power whereas private money is not and does not. The public sector has access to debt with terms of ten, twenty and thirty years. Loan maturities for development and construction are less than three years. Extending loan maturities through the FHA

insurance program was successful in its aim - homeowners could survive economic cycles. Access to more stable financing tools can be leveraged by government to influence change. It has been demonstrated that government policy can and does impact the pattern of development. If public facility investment, and specifically the public expenditure that is already committed for expenditure, can be organized to promote social value and alleviate any of the aforementioned hurdles that limit the ability or willingness of the private sector to pursue compact, mixed-use and sustainable development strategies, then the effect of its fullest potential can be realized.

Public investment decisions, however, are not often being organized around the carefully crafted planning design evidenced in municipal future land use maps contained within their Comprehensive Plans. The State of Georgia requires that local municipal governments prepare and update periodically a strategic examination of growth patterns and make housing, transportation, economic, and demographic assessments in order these local municipalities to remain eligible for state grants. From this and other data, issues and opportunities for the municipality are examined. This analysis provides for the strategic vision of the community, which is expressed in map form as part of the overall Comprehensive Plan.

The City Heights neighborhood in San Diego demonstrated the power of local government initiative to spur private sector investment with an intensity of investment that included a police station and gymnasium, a new elementary school with recreational fields open to the public, and a local library branch that included a community performing arts center. All of this investment occurred within a nine-block area that was considered to be among the most blighted neighborhoods in the city of San Diego in the early 1990s. A master plan was created early in the process to guide such development. The private sector response to a more secure community with public amenities spawned additional investment of residential, office and retail development. Suwanee's Town Center again demonstrated how public sector initiative, in this case the funding and construction of an urban-style ten-acre park, together within an overall master planned area totaling 63 acres, could serve as the impetus for the sort of village design aesthetic desired by the political decision-makers and the community. For the 23 acres purchased by the City of Suwanee, revenue through parcel sales totaled $3.6 million and an expense

of $8.2 million. This demonstrates that this project could not have occurred in the private sector. However, through the directed and concentrated investment of public funds and the subsequent private sector investment loosely following a prescribed master plan, Suwanee now enjoys a thriving, sustainable community containing 87,000 square feet of office space, 100,000 square feet of retail space, a state of the art 23,600 square foot City Hall and 232 residential units. Perhaps it was the city's commitment to increasing social value and environmental stewardship exemplified in its Town Center development that caused the city to be ranked by Money magazine as a Top 10 place to live in the United States in 2007 (Ashford, 2007).

Using Cherokee County as an example of a more typical expression of the form of public investment, we witnessed public investments such as the schools, public parks and branch libraries far-flung from one another and thereby creating no obvious community core. Despite the evidence that suggests schools' ability to influence the location of residential development, the Creekview High School facility, the county's most recently constructed high school, was located on land which was zoned Agricultural at the time of land acquisition and is identified for 'Suburban Growth' on the future land use map. If this school were located just 2 to 3 miles from its existing site, to a location at either the Macedonia or Free Home community village nodes depicted on the County's future land use map, an impact beyond serving the education needs of those enrolled may have been realized.

The concept of a school-centered community has many appealing attributes. But without a range of services that are accessible to the community, these attributes are not fully leveraged. Schools hold the unique ability to serve as a community nucleus due, in part, to their capacity to draw residents and the potential for community outreach programming. But as our case study examples of City Heights and Suwanee Town Center show, other pubic investments that fill a need can be successful solutions for creating an impetus for private sector response. High growth areas, such as the Cherokee County example, afford an opportunity to influence the pattern of development when a new school is constructed. It has been described that new schools attract residents. Residential growth is the precursor to commercial growth, and thus the seeds of sustainable growth. While research generated examples of master-planned communities

that incorporated schools into their plan, the search for a development where the school served as its center and was the catalyst for subsequent compact, mixed-use development by the private sector proved elusive.

What has been demonstrated is that planning and public investment that embraces community can drive private investment that is sustainable. While individual examples exist of parts of this theory of public investment spurring sustainable private response, we lack counter-factual comparison. We cannot know what the suburbs of Atlanta might have looked like nor the degree to which our quality of life would have been improved under the proposed conditions of congregated public facility investment and the plurality of uses such investment can provide. Community is a social and physical environment. However, its physical construct can make sustainable living either easier or more difficult. Toward this end, the following policy recommendations are offered:

Recommendation #1: Each new school constructed, and especially high schools, provide an opportunity for the school to exert a more prominent role in the community. As such, school site selection should adhere to the conditions set in the county's future last use map and seek locations where higher density growth and a mix of uses is desired.

Recommendation #2: In areas where the school centered community approach is instituted, a zoning overlay that utilizes form-based codes would be adopted. In these nodes, density and mixed uses would be preserved by right for a radius of some distance that eliminates land-use restrictions. This entitlement would serve to attract private investment. Each township or municipality would determine the appropriate radius given the surrounds. As well, appropriate density is contextual to a given community within a municipal jurisdiction. Similar overlay zones are now implemented around transit stations as evidenced in the Beltline example as a way to increase density in the immediate surrounds. A transparent and predictable development process whereby entitlement is vested would help to make these sites more attractive to the private development community.

Recommendation #3: Policy measures should be enacted that encourage joint-use, or at least co-located, public facilities. This policy would afford the opportunity to leverage tax dollars. In such form, the school gymnasium would serve the community, the library branch would incorporate the needs of the school, and the recreational fields would serve both the students and the public. Such synergies would not only secure the school's role as community epicenter, but would also reduce the waste of redundant facilities that serve the same population. The efficiencies of joint-use can assist in offsetting potential cost differentials

Recommendation #4: Just as appropriations in state budgets are dedicated to parks, open space or other recreation, a similar structure could be used to dedicate funds for only those projects that are joint-use projects and otherwise encourage congregated public investment. The State of California has utilized this tool to promote the construction of joint-use school facilities.[7]

[7] Proposition 47 (2002), Proposition 55 (2004) providing $100 million for joint-use projects and SB 1677 (2006) expanded the types of projects allowed construction of additional joint-use facilities on school property.

APPENDIX A: Policy Influence on Existing Conditions

Much has been published about sprawl. Though difficult to gain consensus on its definition, a working definition of sprawl comprises many of the following elements: 'low density', 'boundless expansion', 'automobile dependent' and 'land-use segregation'. In its infancy, sprawl was nothing more than an escape from the crime, filth, noise and poverty of the industrialized city (Jackson, 1985). Transportation technology, from the steam ferry of the early 1800s, to the omnibus, then commuter railroads, and finally the automobile, have always been significant drivers for the advancement of this nation's flight from its core. The ever-increasing speed of transportation and the eventual affordability of personal transportation enabled the masses to settle outside the city. From Alexander Jackson Davis' Llewellyn Park community among the foothills of New Jersey's Orange mountains in the 1850s and Olmstead's Riverside project west of Chicago, to the tapestry of planned residential communities traversing the landscape today, the products of sprawling development have proved to be popular over time (Jackson, 1985). They have garnered massive consumer appeal that has lasted 150 years. But sprawl and the suburbanization of America was aided by another critical factor beyond consumer preference – that of public policy.

Aside from the confluence of factors that caused land in the mid-1800s to be cheap such as the tremendous quantity of land, improving speed of transit, and the propensity to seek the quiet life outside the city, government policy played a significant role. Henry Huntington's Pacific Railway Company (1890-1910), through the use of exclusive operating rights with the City of Los Angeles, amassed a tremendous rail network throughout the Los Angeles Basin, stretching east to San Bernardino and west to Santa Monica (Jackson, 1985). Huntington understood the impact that transportation accessibility had on land values. His prevalent motivation for amassing the rail network was not for the fares it generated, but for the opportunity to be a land developer (Jackson, 1985). Huntington made use of his political connections to front-run, making a fortune speculating on territories his lines would soon serve. On the eastern seaboard of the United States, exclusive operating rights for electric railway lines in New York City allowed the Metropolitan Street Railway company to make sizeable profits, all the while

selecting service routes serving the wealthy. Between 1850 and 1871, the federal government granted 130 million acres of public land to railroad companies (Miles *et al.*, 2007). This land was divided into sections with every other parcel going to the rail carriers. The justification for such generosity on the part of the government was the thought that once the railroads were built, the land could be sold at higher valuations then what could be obtained prior to the improvement. The presence of transportation infrastructure was, and remains, a dominant factor of growth.

While the compact suburban form survived for a time, centered on reasonable distance between commuter rail stations, the freedom offered by the automobile obliterated this form (Jackson, 1985). Ironically, however, the primary reason for the exodus to the suburb succumbed to the paradox of popularity. As many sought the enrichment of the quiet solitude of the suburb, this solitude quickly evaporated. In its place came the menace of traffic jams, strip centers, and confinement inside the personal automobile.

In conjunction with the outward spread of the city population at the turn of the 20th century, zoning laws began taking shape. These laws did not begin with government (Weiss, 1987). The system of land-use regulation was introduced and supported by the real estate community as a device to protect the upper-income residential market.[8] In 1916, J.C. Nichols, developer of the famed Country Club District, a significant residential and retail development in Kansas City, MO addressed the National Conference on City Planning and remarked:

> *"Now, how in the world can the private developer, without municipal assistance, expect his property to succeed, if he is to work with unregulated development all around him" (Weiss, 1987).*

These zoning laws were an extension of the private deed restrictions builders and developers frequently encumbered on their own property. But there was no mechanism to 'protect' the surrounding areas outside of the land they controlled from the potential of dissimilar, and perhaps non-compatible, use. For a time, developers would purchase

[8] Other motives of zoning included the desire of municipalities to wrest control from politicians, desire to guide growth and development and a tool of segregation (Power, 1989).

large tracts of land in an effort to buffer these projects from potentially undesirable adjacent land uses. However, this presented its own burden, the tremendous financial risk of being able to stay afloat through the inevitable real estate cycles while holding such huge land positions. Though the government's right to encumber private property was challenged, public zoning fit the bill.[9] In 1921, Hebert Hoover, then Secretary of Commerce, appointed an Advisory Committee on Zoning, which published *A Standard State Zoning Enabling Act* in 1924 and *A Standard City Planning Act* in 1928. Most states adopted these acts, almost verbatim, ushering in public regulation of all private land (Power, 1989).

The tool of land-use regulation came at a peak time in the U.S. economic cycle.[10] Mass production across all consumer goods, not the least of which was Ford's Model T, was revolutionizing the American dream. The physical separation of residential and commercial or industrial use was made economically feasible by the automobile (Orradre, 1992). The U.S. had grown to become one of the richest nations in the world. But the stock market crash of 1929 led to significant legislation that furthered pubic policy's role in the causes of sprawl. The early 1930s were a difficult time across the economy and the real estate business was no exception. Widespread loan default, foreclosure, bank failure, tight lending standards and massive unemployment prevailed. Land and home values plummeted and real estate transactions were few. Among the federal government's response to the crisis was the organization of the Federal Housing Administration (FHA) in 1934, a part of the larger National Housing Act. The FHA provides mortgage insurance predominately on single-family loans made by FHA-approved lenders in the United States. This program had a very direct affect on the pattern of development and construction going forward. The newly conceived standard appraisal procedure took close account of the borrower's economic status, measured by

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[9] Village of Euclid v. Ambler Realty Co. (1926) Supreme Court of the United States. 272 U.S. 365. In an effort to prevent the spread of industrialized Cleveland, the suburban village of Euclid enacted a zoning ordinance (1922) that precluded this use, negatively affecting the property owned by Ambler Realty. The U.S. Supreme Court sided with the Village of Euclid, citing Ambler's inability to prove an unconstitutional "taking" as provided for by the 14th Amendment to the U.S. Constitution. (*Summary of case by Oyez Project, http://www.oyez.org/cases/1901-1939/1925/1925_31*

[10] The 'Roaring Twenties' were marked by the U.S. economy moving from wartime to peacetime economy. America became the richest nation in this decade. By 1927 fifteen million Ford Model T's were sold in the U.S. *www.u-s-history.com/pages/h1564.html.*

current income, stability of employment, and the quality not only of the house and land upon which it was built, but the characteristics of the surrounding neighborhood (Weiss, 1987). This system accomplished two very important objectives. First, imposing these building and development standards helped to reduce the competition. Those developers and builders and neighborhoods that failed to meet these standards where denied the benefits of mortgage insurance. This insurance was the critical factor in lending institutions making any loans during this time. These standards effectively mandated to the developer how and where to develop and build. The effect favored large-scale master developments in the suburbs and away from urban development and redevelopment. Weiss (1987) chronicles the American real estate industry and land planning and establishes many connections between the real estate community of this time and their influence on government policy and the subsequent role that this policy played on development patterns.

The FHA standards also allowed the borrower to use long-term, fixed interest rate, amortized mortgages.[11] This program opened up the door of housing affordability, which was the second objective. Home affordability was no longer measured by the price point of the home, but by the affordability of the monthly payment. Factors such as prevailing interest rates and the amount of down payment one is able to make plays a significant part of the price that can be paid for a home. The quasi-governmental entities Fannie Mae (1938) and later Freddie Mac (1970) added much-needed liquidity to the mortgage market. These agencies purchased individual mortgages from the lenders, thereby freeing capital for the bankers to continue lending. The programs achieved their aim. Home ownership in Georgia alone surged from 30% in 1940 to 67% in 2000 (U.S. Census Bureau). The common form associated with this housing surge tended toward homogenous communities that spread throughout the suburbs.

The expansion of middle-income, affordable housing in the periphery of cities across American amplified the popularity of the automobile and as the automobile proliferated so did the need for more intensive roadway systems. The Eisenhower administration successfully signed legislation in 1956 that would complete a 66,000-

[11] These 20-year, 80% loans replaced the 3-year, 50% loans previous norm offered by commercial banks (Weiss, 1987).

kilometer interstate highway system over the next decade. The vital component that enabled the realization of this highway system, which had been floundering about Congress for some time, was the federal commitment of 90% of the estimated cost to complete (Rose, 1990). The highway system, once sufficiently completed, allowed for easy migration in and out of cities, opening up rural areas and fundamentally affecting the shape of planning and development.

Spurring suburban sprawl was government tax policy that benefited home owners instead of renters, New Deal policies that favored construction in the suburbs over renovation and infill development in the urban core, and the continued financial commitment to road construction that benefited the automobile instead of continued investment in mass transit. As residents migrated, so to did retail enterprise, employment centers and capital investments by the public sector. In *The Limitless City: A Primer on the Urban Sprawl Debate,* Oliver Gillham (2002) summed up the problem of sprawl: "*Benefits of sprawl are immediate, short-term and focused towards private individuals, and the costs are gradual, long-term and shared by the public.*"

Government and industry policy helped to support the condition prevalent across the country today. While the federal highway system and the subsequent hierarchal roadway patterns that connect them was a boom for economic growth and prosperity, this pattern of development now becomes problematic because the infrastructure is applicable only for that use. Even if zoning regulations were summarily rejected, adaptive reuse of this infrastructure would be troublesome and expensive. Efforts to reverse the trend can seemingly be inefficient in the short run (Litman, 2009).

APPENDIX B: Unique Challenges of Compact, Mixed-Use Projects

The product of the land delivery system is a result of the synthesis of four broad pressures: (1) governmental regulation, (2) financial viability, (3) market acceptance, and (4) physical constraints of the property. The decades of suburban expansion evidenced a successful balancing act across all of these categories. Government regulation played its role by prescribing generally where commercial or residential or industrial uses would take place. In this way, the process was somewhat predictable and systematic. As described earlier, this was exactly the point when the real estate community first advocated for zoning in the 1930s. The ability to evaluate financial viability could often be sketched out on the "back of a napkin", which is to say that fundamentally it lacked complexity. Commercial developers utilize rules of thumb as they relate to proximate population density from a proposed location, median household income, traffic counts on adjacent roadways, and accessibility. Residential developers similarly gauged market supply/demand using these factors as well as competitor analysis to further understand prospects for a successful project. The capital markets use essentially the same method of competitor analysis in their appraisals. Because similar product and projects were delivered many times before, the risk could be quantified with basic sensitivity analysis. By and large, if one did not venture too far from typical practice, the market could be measured, the entitlements could be gained, and the project could be financed. Left to consider were the specific attributes or constraints of a particular tract of land. Admittedly, this is an over-simplified viewpoint, but in broad terms it is useful when making comparisons to a compact, mixed-use project.

While evidence exists of government regulatory change to accommodate smart growth principles, new urbanism is still a movement and less systematic in application then conventional development. From a policy perspective, new urbanism is encouraged in various jurisdictions but falls short of having any enforcement mechanisms. Advocates of smart growth lobby governments to go farther, for example, by affording expedited permitting or density bonuses for smart growth projects (Wilbur, 2004). But overcoming certain hurdles is first required. The implementation of smart growth in the suburban context is particularly challenging in a number of ways. These unique

challenges include (1) government regulation that contradicts its basic tenants, (2) financing difficulty beyond that which is typical for conventional developments, (3) increased costs and subsequent profitability concerns, and (4) concern with regard to consumer preferences.

In addition to interviews conducted with various land development professionals, a survey was conducted and analyzed. The purpose of this survey was to gather data on certain attitudes relating to land development patterns and the viability, and thus sustainability, of compact, mixed-use development projects verses lower-density developments with separated land uses. Appendix A of this paper contains the survey questions, and Appendix E contains the data summary, from which the following analysis was derived.

Table 5 evaluates the attitude of those surveyed regarding the low-density, separated use pattern of development.

Table 5: Attitude toward low-density, separated use development pattern.

	Not Problematic	Somewhat Problematic	Very Problematic	Total
SF Bldr./Dev. (N=7)	3	0	4	
MF Bldr./Dev. (N=5)	1	2	2	
Other (N=4)	0	3	1	
Total	4	5	7	16

N = Number of respondents

In this sample of metro Atlanta developers, single family developers were polarized on the issue, answering either that this condition is not a problem or that it is very much a problem, while none of these respondents replied that this development pattern was "somewhat problematic". Overall, however, a majority (twelve of sixteen) of the respondents indicated that this form of development was at least somewhat of a problem. Eleven of the sixteen respondents indicated that they had participated in a compact, mixed-use development. This survey sought to make a determination as to whether this sample of Atlanta-area land development professionals felt that compact, mixed-use developments were more challenging, less challenging, or equally as challenging for a number of factors critical to sustainable development strategy. These elements include

entitlement, market acceptance, ability to finance the project, and overall profitability. Table 6 summarizes these findings.

Table 6: Comparison of compact, mixed-use developments to conventional low-density, separated use development projects.

	Less Difficult / Better Performance	Neither Better nor Worse	More Difficult / Lower Performance
Entitlement	2	2	7
Mkt. Acceptance	1	6	4
Financing	1	7	3
Profitability	0	5	6
Total	4	20	20

As previously mentioned, eleven out of the sixteen professionals had actually participated in a compact, mixed-use project. Comparatively few responded that the entitlement and financing process was less difficult than that of the conventional pattern of lower-density and separated-use development projects. None of the respondents indicated that profitability exceeded expectations, and six of the eleven developers indicated a lower level of profitability for mixed-use, compact developments. This result seems to contradict an earlier survey question that inquired as to whether compact, mixed-use development patterns were considered financially viable. All respondents to that question indicated that these types of developments were either somewhat or highly financially viable. Yet none ranked the financial performance of these projects as 'exceeding' expectations. However, the difficult current real estate environment may be causing a negative bias in this attempt to compare profitability levels between these types of development forms.

Tables 7 and 8 rank the hurdles to compact, mixed-use developments. These responses were categorized between real estate professionals who indicated that their primary business was done in an urban, suburban or rural environment. The first of these, Table 3, looks at what was listed as the primary hurdle to compact, mixed-use development projects. Most respondents indicated that the primary constraint to compact, mixed-use development projects was government regulation. After government

regulation, other elements listed as primary hurdles included concern over profitability and the ability to finance.

Table 7: Hurdles to compact, mixed-use projects: Number of respondents ranking primary hurdle.

	Government Regulation	Consumer Preferences	Scale/Size of Project	Financing	Profitability	Expertise Across Disciplines
Urban (N=6)	4	0	0	0	2	0
Suburban (N=9)	3	0	1	2	1	1
Rural (N=1)		1				

When analyzing the frequency that each item was listed as one of the top three hurdles for compact, mixed-use development, financing occurred most frequently as a top-three most common problem to mixed-use development, second in frequency included both government regulation and concerns over profitability. The third was concern over consumer preferences. That fact that financing was among the largest constraints to compact, mixed-use projects could be a function of two issues; the specialization in the lending industry and/or the size of the capital investment associated with many mixed-use developments.

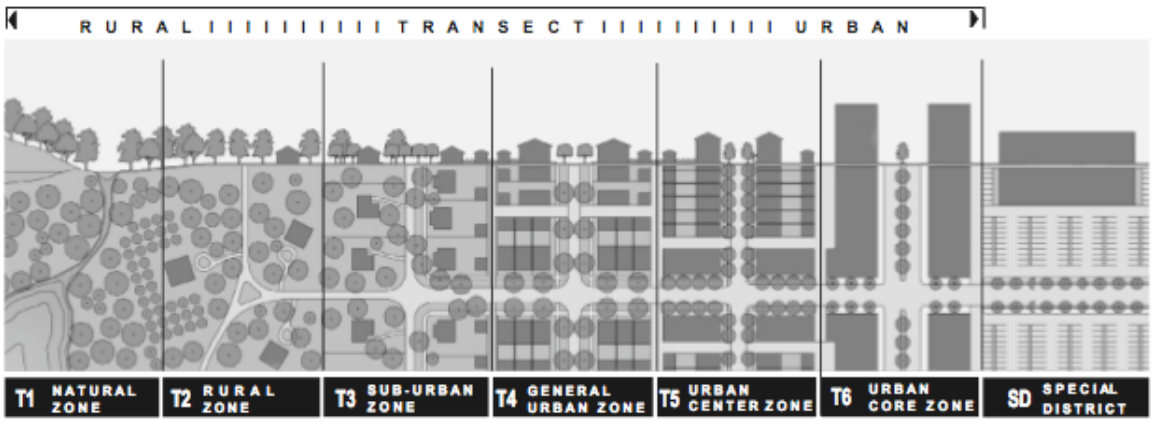
Table 8: Received a ranking of 1, 2, or 3 in ordering of hurdles to compact, mixed-use.

	Government Regulation	Consumer Preferences	Scale/Size of Project	Financing	Profitability	Expertise Across Disciplines
Urban	4	2	2	5	3	1
Suburban	5	4	2	6	5	2
Rural		1			1	1
Total	9	7	4	11	9	4

Financing mixed-use projects can be more difficult because lenders tend to specialize in financing by project type. Real estate capital markets are broken down into several categories; private debt, private equity, public debt and public equity. Depending on the project, one or more of these sources are used. Even within the realm or private debt, there are lenders for office projects, retail developments, single family development, multifamily development and so on. Mixing these uses in one project requires complex legal arrangements in order to collateralize the obligation. In addition,

since there are few, if any, comparables to work with in a given locale, it is difficult to quantify risk and appraise the project value. Capital markets are risk-averse. Measuring risk on something new is more difficult than the analysis for something familiar (Wilbur, 2004). In this way, such projects face unique obstacles compared to that of single-use development projects.

The image of an alternate solution includes the congregation of elements of activity that leverage financial investment, allowing for increased social synergy, and are organized in a manner that is less reliant on auto transportation. The elements themselves start with schools, but also can include recreation fields, libraries or other social infrastructure. The typical school facility could be a building block of the development, if organized and accessible to the community beyond students. Such a school would include a library that also serves as the local community branch, a performing arts center that is a shared facility for the school and the at-large arts community. The recreation fields would be open to the public as well, sharing use with the student population. Taken collectively and planned in a manner agreeable to the tenets of new urbanism, a social nucleus is developed. The critical function of the school is that the school has demonstrated the ability to drive residential growth (Wagner, 2009). Instead of a school constructed on a large tract of land and surrounded by low-density residential zoning as evidenced in the Creekview High School in Cherokee County, the construction of school would more closely follow the rural to urban transect (Figure 15).



Source: The Lexicon of Urbanism. Duany Plater-Zyberk & Co. (2007).

Figure 15: Rural-Urban Transect.

The zone appropriate to a given location would be considered in context. Fundamentally, however, the assets funded through public investment would no longer be organized at the rural end of this transect, but toward the urban end of the spectrum. The land uses planned and allowed-for around this social nucleus of public investment would include neighborhood commercial, moderate to high-density residential and similar. The further from this core, this intensity of development eases. There are a number of ways in which this degree of organization leverages the viability of commercial goods and services in the neighborhood. In effect, the school, park and library together act to "anchor" the development. Table 9 depicts the attitude of the survey respondents as it relates to community value associated with schools, libraries and active recreational space.

Table 9: Attitude Toward Public Investment as Amenity

	Public School as a Marketable Amenity	Public Library as a Marketable Amenity	Public Recreational Fields as a Marketable Amenity
Urban Practioner (N=6)	6	3	4
Suburban Practioner (N=9)	9	9	8
Rural Practioner (N=1)	1	1	1
Total	16	13	13

Respondents across all categories in urban, suburban and rural contexts regard public schools as amenities and a large majority of respondents, thirteen of sixteen, include libraries and recreational fields as amenities. If these assets are considered favorable attractions, then congregating these assets could serve to create a community nucleus, both physically and socially. These elements draw residents. Dense residential growth can then perpetuate the viability of commercial concerns, retail services and perhaps even mass transit viability. Community events such as little league, school sporting events, concerts and plays all draw from not just the immediate neighborhood, but also from surrounding neighborhoods. Community events together with all the events of a typical school calendar keep a fairly constant and regular circulation of use by its citizens. This increases the chances for successful private enterprise. The central premise of

congregated public investment would be to create such a social nucleus from which the private sector would then participate (Mumford, 1961).

APPENDIX C: Durham County, NC Comprehensive Plan: Schools Element

Durham County, North Carolina, identifies schools as a vital component of community infrastructure and, as such, incorporated a Schools Element in its Comp Plan adopted in 2005. This Comp Plan establishes a pattern of growth for Durham City, Durham County and Durham Public Schools. The Schools Element portion of the Comp Plan, in summary, provides for the following:

Goal 1: Provide and maintain sufficient school building capacity for the needs of school children in Durham. Objectives:

- Establish and maintain level of service standards for public school facilities by type of facility.
- Develop and maintain current data for the evaluation of the adequacy of school facilities in rezoning requests.
- Maintain and improve public school facilities as needed.
- Lessen reliance on mobile classrooms.

Goal 2: Ensure that school facilities are incorporated into the long-range comprehensive planning process so that schools may serve as focal points for communities and neighborhoods. Objectives:

- Utilize common data sources in the development of the Durham Public Schools' "Capital Improvements Plan" and the Comprehensive Plan.
- Locate schools where they may assist in providing community and neighborhood focal points.
- Consider community character in the design and appearance of schools (ICMA Press, 2008).

The Schools Element of the Durham Comprehensive Plan continues that "new schools should not be located in areas where growth is not planned by the City and County. Similarly, opportunities for the co-location of schools with other complementary public facilities, such as parks and libraries, should be pursued" (Durham City-County Planning

Department 2007). As it stands currently, Cherokee County's Comp Plan includes no such policy and the School Board's actions in school siting seemingly run counter to such strategy.

APPENDIX D: Survey Questionnaire.

Please respond to the following questions by either writing your selection next to the question or by writing your answer in the space provided. Please note that all information provided will be treated in the strictest of confidence.

SECTION 1 – OVERALL BUSINESS PHILOSOPHY:

1. What is your firm's primary business? _____.
    A. Single-Family Residential Builder/Developer.
    B. Multifamily Residential Builder/Developer.
    C. Commercial Developer.
    D. Real Estate Consultant.
    E. Other: _____.

2. How many years has your firm done business in the Atlanta area? _____.
    A. Less than 5 years.
    B. Between 5-10 years.
    C. Greater than10 years.

3. Choose from the list below the characteristic of the metro region you do most of your business. _____.
    A. Urban.
    B. Suburban.
    C. Rural.

4. Is the presence of sanitary sewer an important factor in making land investment choices? _____.
    A. Yes.
    B. No.

Answer questions 5, 6 & 7 if your firm is a single-family residential builder and/or developer.

5. In the ***suburban or rural*** environments, what density do you find most favorable? _____.
    A. 1-2 units per acre.
    B. 3-4 units per acre.
    C. 5-6 units per acre.
    D. More than 7 units per acre.

6. Have you been able to entitle your projects to achieve desired density? _____.
    A. Always achieve the desired density.
    B. Sometimes achieve the desired density.
    C. Seldom achieve the desired density.

D. Never achieve the desired density.

7. What segment of the market most closely characterizes your target price point? _____.
   A. Under $125,000
   B. $125,000 – 199,999
   C. $200,000 - $499,999
   D. $500,000 - $999,999
   E. Over $1,000,000

SECTION 2 – LAND DEVELOPMENT PATTERNS:

8. What is your attitude toward low-density, separate uses as a development pattern? _____.
   A. It is not problematic.
   B. It is somewhat problematic.
   C. It is very problematic.

9. Of the following choices, what do you believe to be the most influential factor in the continuing pattern of low-density, separate uses? _____.
   A. Government Regulation.
   B. Consumer Preferences.
   C. Profitability.
   D. Financing.
   E. Other _____.

10. Over the past decade, compact, mixed-use development patterns have surfaced. Do you consider this pattern to be financially viable? _____.
    A. Not viable.
    B. Somewhat viable.
    C. Highly viable.
    D. Don't know.

11. Do you consider the compact, mixed-use development pattern to be viable in the suburban context?
    A. Not viable.
    B. Somewhat viable.
    C. Highly viable.
    D. Don't know.

12. Do you consider the compact, mixed-use development pattern to be viable in the exurban/rural context?
    A. Not viable.
    B. Somewhat viable.
    C. Highly viable.

D. Don't know.

13. Please indicate which of the following factors is the most important hurdle for a compact, mixed-use project, which comes next in importance, which is third, and so forth?

Government Regulation	1st in rank, 2nd, 3rd, 4th, 5th, 6th. _____
Consumer Preferences.	1st in rank, 2nd, 3rd, 4th, 5th, 6th. _____
Scale/Size of Project.	1st in rank, 2nd, 3rd, 4th, 5th, 6th. _____
Financing.	1st in rank, 2nd, 3rd, 4th, 5th, 6th. _____
Profitability	1st in rank, 2nd, 3rd, 4th, 5th, 6th. _____
Expertise across disciplines	1st in rank, 2nd, 3rd, 4th, 5th, 6th. _____

14. Has your firm developed/built in a compact, mixed-use development? _____.
    A. Yes.
    B. No.

15. If the answer to the above question was **Yes**, choose the best description for each of the following areas.

    A. Entitlement: _____ (choose i, ii, or iii)
        i. Obtaining the entitlements for the project was less difficult than obtaining entitlements for a conventional development.
        ii. Obtaining the entitlements for the project was neither more nor less difficult than obtaining entitlements for a conventional development.
        iii. Obtaining the entitlements for the project was more difficult than obtaining entitlements for a conventional development.

    B. Market Acceptance: _____
        i. Absorption performed above expectation.
        ii. Absorption performed at expectation.
        iii. Absorption performed below expectation.

    C. Financing: _____.
        i. Obtaining project financing was less difficult than obtaining financing for a conventional development.
        ii. Obtaining project financing was neither more nor less difficult than obtaining financing for a conventional development.
        iii. Obtaining project financing was more difficult than obtaining financing for a conventional development.

    D. Profitability: _____.
        i. Profitability exceeded expectations.
        ii. Profitability matched expectations.
        iii. Profitability was below expectations.

SECTION 3 – PUBLIC INVESTMENT:

16. Do you consider a public school located adjacent to your project to be a marketable amenity? _____.
    A. An adjacent public school is a marketable amenity.
    B. An adjacent public school is not a marketable amenity.
    C. An adjacent public school has no affect on marketability, positive or negative.

17. Do you consider a public library located adjacent to your project to be a marketable amenity? _____.
    A. An adjacent public library is a marketable amenity.
    B. An adjacent public library is not a marketable amenity.
    C. An adjacent public library has no affect on marketability, positive or negative.

18. Do you consider public recreational fields located adjacent to your project to be a marketable amenity? _____.
    A. An adjacent public recreational field is a marketable amenity.
    B. An adjacent public recreational field is not a marketable amenity.
    C. An adjacent public recreational field has no affect on marketability, positive or negative.

Thank you for taking the time to complete this survey.

Sincerely,

David M. Edwards

APPENDIX E: Survey Data Summary

Respondent Number	Question 1 Code Number 1 2 3 4 5	Question 2 Code Number 1 2 3	Question 3 Code Number 1 2 3	Question 4 Code Number 1 2	Question 5 Code Number 1 2 3 4	Question 6 Code Number 1 2 3 4	Question 7 Code Number 1 2 3 4 5
1	1	3	2	1	4	2	3
2	2	2	1	1	4	2	3
3	2	3	1	1	0	0	0
4	1	2	2	1	2	2	2
5	1	3	2	1	2	1	2
6	2	3	1	2	0	0	0
7	3	3	2	1	1	2	2
8	2	3	1	1	0	0	0
9	1	3	2	1	2	2	2
10	1	3	2	1	2	1	3
11	1	1	2	1	2	2	3
12	1	3	3	2	1	4	3
13	2	2	2	1	4	1	2
14	5	1	1	1	0	0	0
15	4	3	1	1	0	0	0
16	3	2	2	1	0	0	0

Respondent Number	Question 8 Code Number 1 2 3	Question 9 Code Number 1 2 3 4 5	Question 10 Code Number 1 2 3 4	Question 11 Code Number 1 2 3 4	Question 12 Code Number 1 2 3 4	Question 13 Code Number N/A	Question 14 Code Number 1 2
1	1	1	2	1	1		1
2	3	3	3	1	1		1
3	2	1	2	2	2		1
4	3	1	3	2	1 2		1
5	1	2	2	2	1		1
6	1	3	2	1	1		1
7	2	2	3	2	1		1
8	2	3	2	1	1		1
9	1	2	3	2	2		1
10	3	1	2	2	1		2
11	3	1	2	1	1		2
12	3	5	3	3	1		2
13	3	1	3	3	3		1
14	3	1	3	2	2		1
15	2	1	2	2	1		2
16	2	1	2	2	1		2

Respondent Number	Question 15A Code Number 1 2 3	Question 15B Code Number 1 2 3	Question 15C Code Number 1 2 3	Question 15D Code Number 1 2 3	Question 16 Code Number 1 2 3	Question 17 Code Number 1 2 3	Question 18 Code Number 1 2 3
1	3	3	2	3	1	1	1
2	3	2	3	2	1	2	3
3	3	2	2	2	1	1	1
4	3	2	2	2	1	1	1
5	3	2	2	2	1	1	1
6	1	1	1	3	1	1	1
7	2	2	2	3	1	1	1
8	1	3	3	3	1	2	1
9	2	3	2	3	1	1	2

10	0	0	0	0	1	1	1
11	0	0	0	0	1	1	1
12	0	0	0	0	1	1	1
13	3	3	2	3	1	1	1
14	3	2	3	2	1	1	1
15	0	0	0	0	1	2	2
16	0	0	0	0	1	1	1

APPENDIX F – Key Interview Summaries

2/17/2010
Interview: Russell R. Sims
Title: Assistant Superintendent, Support Services, Facilities and Construction Management.
Entity: Cherokee County Schools

1. Provide cursory overview of the site selection criteria.

- The state mandates parcel size. These are:
  Elementary School: 5 acres + 1 per 100 FTE (full-time equivelancy)
  Middle School: 12 acres + 1 per 100 FTE
  High School: 20 acres + 1 per 100 FTE

- Typical enrollment planning models:
  Elementary School 1,200 FTE
  Middle School 1,500 FTE
  High School 1,800 – 2,000 FTE

For example, the new Creekview HS and under construction River Ridge high schools in Cherokee are using a planning model of 1800 FTE. According to this formula, a minimum site size is 20ac + (1800 fte / 100) = 38 acres. Russ brought up the subject of the small school initiative and made two claims: (1) it's just not an economic reality for a bunch of schools at a capacity of 500 students. (2) the state does not recognize schools with enrollments under 400 students. Lynn Jackson would be the one to talk to regarding this policy.

The Atlanta Regional Commission (ARC) uses a planning factor of 0.725 for single-family homes, i.e. # s.f homes in school boundary x .725 = enrollment base.

- Risk / Hazard considerations with site selection.
- The round number cost of a high school facility is $60MM. They can afford to build one every 5 years.
- A very important criterion is geographic coverage for attendance zones.

2. What high schools have been built since 1990?
5 high schools currently in Cherokee:

Cherokee County High Schools 2010

Name	Year Built	Current Enrollment	Land Size	
Cherokee	1957	2072	40.95	
Creekview	2006	1645	90	* incl. middle school
Etowah	1976	2132	146	*incl. middle & intermed.

Sequoyah	1990	1760	31	
Woodstock	1996	2141	104	*incl. middle school

3. Cherokee County accepts land donations for schools. Has this program proven successful?

- The River Green (Cousins) rezoning (west of the City of Canton along Hwy 20) included a land donation for a new school. The proposed site was described as "a big hole" and "totally unusable" and therefore not accepted by the School system. Well, Cousins was already marketing the fact that a school would be on-site and they were getting favorable reaction. In the end, the developer assisted the School System in securing an adjacent site and donated $1MM.
- The Towne Lake project (Trammel Crow) included a land donation for a MS/HS. The school system, "poured millions into rock blasting and building half a bridge . . . [and] would have been better off purchasing a site" somewhere else.
- Providence Point, located west of Holly Springs along Keeter Road) donated a school site that is unusable for a school, though the system is considering using the site for central offices.

In summary, he felt the land donation program generally is not beneficial to the school system. "I've never had one work." In some respects it is used as a negotiating tool.

4. Is there much dialogue with municipal planning agencies to coordinate?

- While the market was active, someone from the planning and forecasting department would attend the zoning hearings each month to understand, first hand, what was happening. Some municipalities would encourage coordination with the school system as ask for a letter from the school system to evidence an understanding.
- With less development activity, they now subscribe to MetroStudy to track housing and development activity.
- The system always is in dialogue with the "people doing the roads".

5. Where can I access the school boundary zones?

www.cherokee.k12.ga.us >Departments >Planning & Forecasting >School Boundaries.

6. Has any dialogue taken place with regard to joint-use facilities?

"Parks and Rec. has a $90MM bond, but we can't get them to talk to us." The school system has always built competition-style gymnasiums, even for elementary schools. There are no Parks & Rec. gym facilities in the county. Parks and Rec uses lease agreements for fields and hard courts. Russ made it sound like these leases were '50 years for $1' type arrangements. "Same with library. They all want there own building."

2/22/2010
Interview: Susan White
Title: Director
Entity: Sequoyah Regional Library System

1. Where does the capital come from for a new facility?

- The state sells bonds for a slate of new facilities. In 2009 the legislature approved funding for eighteen (18) new projects. (A project can be either a new facility or renovation of an existing facility. Cherokee County had two (2) projects funded.
    - R.T. Memorial renovation and addition. $1.4MM total estimated cost. Bonds where sold in November for $1.096MM.
    - N.E. library – new 20,000 sq. ft. facility. $5.0MM total estimated cost. The proposed location for this facility was the Free Home area. In this instance, Parks and Rec. secured a site between Free Home and Macedonia, and the proposal is that the library will build its facility on a portion of this site. The state can contribute a maximum of $2MM.
- The balance of the funds needed for capital projects comes from the County. For the R.T. Memorial renovation, this total is $304,000 and will come from SPLOST. For the N.E. library, this total would be $3MM. Due to economic conditions, this has been postponed.
- County and City fund operations.

2. What are the site selection criteria?

- 5 libraries currently in Cherokee:

Cherokee County Libraries 2010

Name	Year Built	Attendance*	Land Size	Bldg Size
R.T. Jones Memorial	1991	171,025		30,000 sf
Rose Creek	1991	185,974		10,000 sf
Hickory Flat	1993	136,555		10,000 sf
Ball Ground	1997	65,553		10,000 sf
Woodstock	2005	184,843		20,000 sf

**Source: Sequoyah Regional Library Statistical Report. Fiscal Year 2009*
*** Facilities prior to those constructed in the 1990's included facilities in Canton and Woodstock. These libraries where housed in various buildings within the core city over the years.*

- While there are no published criteria that this library system follows, between 5-10 years ago a future needs analysis was conducted by then director xxx. The

proposed locations for facilities centered on geographic coverage and residential density.

- Based on this needs analysis, a search is conducted. This search is long-term in nature. The County secures the property and deeds the land to the library board once the facility has been constructed.

3. Does the System accept land donations? Has this program proven successful?

- The land upon which the new Woodstock library is built was donated.

4. Is there much dialogue with municipal planning agencies to coordinate?

- In the instance of the N.E. facility land search, Ms. White met with the County Manger to discuss, and from that the joint-use arrangement was made. Process informal.

5. Has any dialogue taken place with regard to joint-use facilities?

- Since the Parks system received the $90MM bond issue, they have been buying property. The library system has no problem with the concept of joint-use, where in makes sense. She did express concern over how the school childrens' safety could be assured with a joint-use facility with the school system.

6. How do you track usage? What level of usage constitutes a 'healthy' branch?

- Usage is tracked by 'people counters' at the door, circulation of books and Internet usage on library computers. While they have no hard and fast baseline to judge the health of branches, generally 100,000 visitors in a year constitute a well-used branch. Ball Ground was singled out as an under-used facility. Ms. White stressed that the City of Ball Ground was adamant about getting a library, even though this city, and this part of Cherokee county is thinly populated.

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